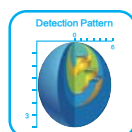
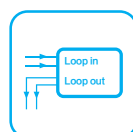
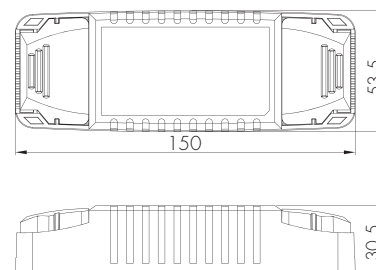
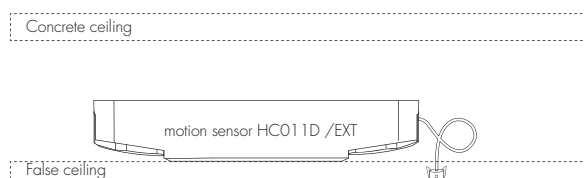


# False Ceiling Version PWM Dimming Control

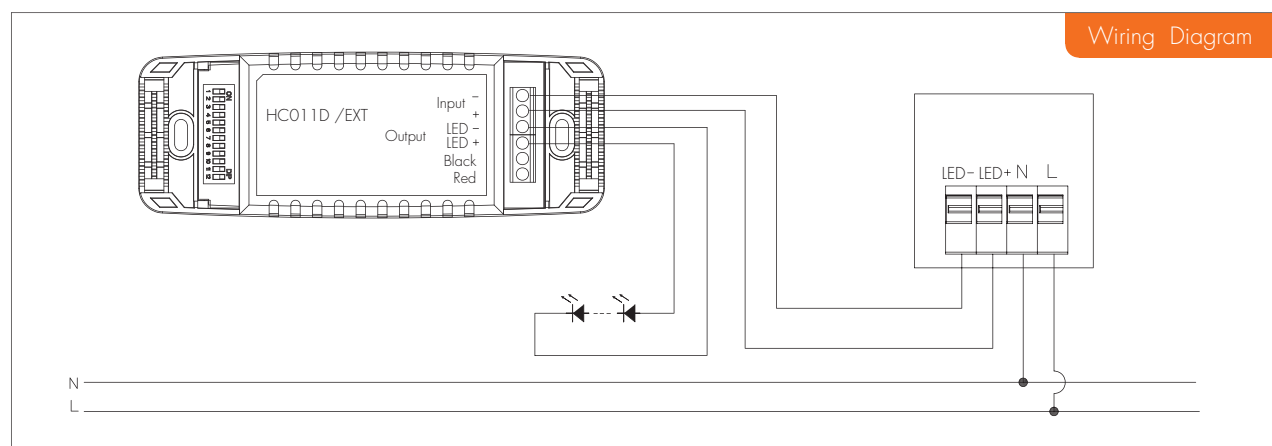
Model: HC011D /EXT



Thanks to our worldwide patented circuit, this sensor is particularly designed to work with most ordinary non-dimmable LED drivers \*, Constant Current (350mA-1050mA) and Constant Voltage ( 20-90V ) , to achieve bi-level or tri-level dimming function, it is the most cost effective LED dimming control for LED lighting, easy upgrading the existing non-dimmable LED fixture to automatic dimmable fixture with very little change in the fitting construction. (\*This sensor however cannot dim drivers with over-load protection circuitry. If the over-load protection is achieved by thermal switch, then the driver has no problem to be dimmed by this motion sensor ).



Ideally suited to retrofit projects where the luminaire is too small to accommodate the sensor internally, this motion sensor can be completely hidden from view thanks to the penetration properties of microwave sensors. Only a small hole is required to position the daylight sensor.



## Functions and Options

### 1 Tri-level Dimming Control (Corridor Function)

Same as Tridonic excel control gear, Hytronik builds this function inside the motion sensor to achieve tri-level dimming control, for some areas that require a light change notice before switch-off.

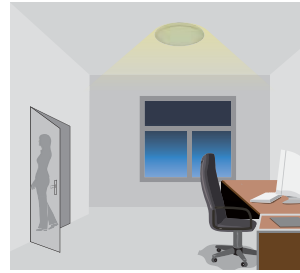
It offers 3 levels of light: 100%→dimmed light (10%, 20%,30%,40%, 50%,60%,70%,80% optional)→off; and 2 periods of selectable waiting time: motion hold-time and stand-by period; Selectable daylight threshold and choice of detection area.



With sufficient natural light, the fixture does not switch on when presence detected.



With insufficient natural light, the sensor switches on the light automatically when person enters the room.

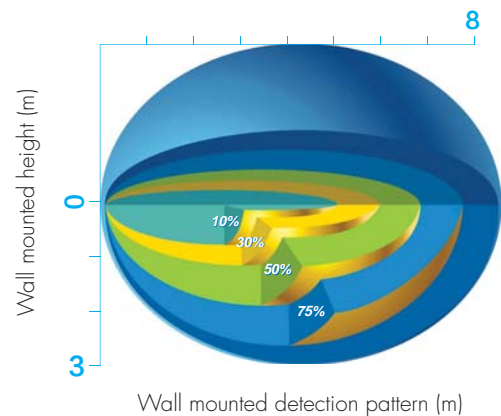
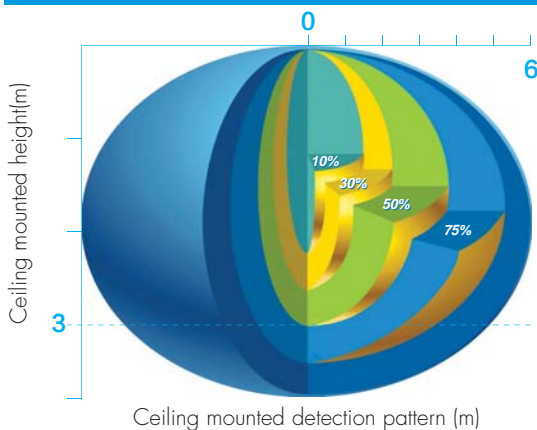


People left, light dims to 10%/ 20%/30%/40%/50%/60%/ 70%/80% (optional) stand-by level after the motion hold-time.



Light switches off automatically after the stand-by period elapsed.

## Detection Pattern



## Settings

### 1 Detection area

Detection area can be reduced by selecting the combination on the DIP switches to fit precisely for each specific application.

	1	2	
I	●	●	100%
II	●	○	75%
III	○	●	50%
IV	○	○	10%



I – 100%  
II – 75%  
III – 50%  
IV – 10%

### 2 Hold-time

Hold-time means the time period you would like to keep the lamp on 100% after the person has left the detected area.

	3	4	
I	●	●	5s
II	●	○	3min
III	○	●	10min
IV	○	○	30min



I – 5s  
II – 3min  
III – 10min  
IV – 30min

### 3 Daylight sensor

The daylight threshold is the lux level of surrounding natural light you want to switch on / off the fitting, it can be set on DIP switches, to fit for particular application.

	5	6	
I	●	●	Disable
II	●	○	50Lux
III	○	●	10Lux
IV	○	○	2Lux



I – Disable  
II – 50 Lux  
III – 10 Lux  
IV – 2 Lux

#### 4 Stand-by period (corridor function)

This is the time period you would like to keep at the low light output level before it is completely switched off in the long absence of people.

Note: "0s" means on/off control;

" $+\infty$ " means bi-level dimming control, fixture never switches off.

	7	8	9	
I	●	●	●	0s
II	●	●	○	10s
III	●	○	○	5min
IV	○	●	●	10min
V	○	●	○	30min
VI	○	○	●	1h
VII	○	○	○	$+\infty$



I – 0s  
 II – 10s  
 III – 5 minutes  
 IV – 10 minutes  
 V – 30 minutes  
 VI – 1 hour  
 VII –  $+\infty$

#### 5 Stand-by dimming level

This is the dimmed low light output level you would like to have after the hold-time in the absence of people.

Note: The dimming level on the DIP switch is calculated on the 350mA basis, if the actual LED current is higher than 350mA, then the dimming level is reduced in proportion according to below chart:

	10	11	12	
I	●	●	●	10%
II	●	●	○	20%
III	●	○	●	30%
IV	●	○	○	40%
V	○	●	●	50%
VI	○	●	○	60%
VII	○	○	●	70%
VIII	○	○	○	80%



I – 10%  
 II – 20%  
 III – 30%  
 IV – 40%  
 V – 50%  
 VI – 60%  
 VII – 70%  
 VIII – 80%

Actual dimming level LED current	10%	20%	30%	40%	50%	50%	70%	80%
350mA	10%	20%	30%	40%	50%	60%	70%	80%
450mA	8%	16%	23%	31%	39%	47%	54%	62%
500mA	7%	14%	21%	28%	35%	42%	49%	56%
550mA	6%	13%	19%	25%	32%	38%	45%	51%
600mA	6%	12%	18%	23%	29%	35%	41%	47%
650mA	5%	11%	16%	22%	27%	32%	38%	43%
700mA	5%	10%	15%	20%	25%	30%	35%	40%
800mA	4%	9%	13%	18%	22%	26%	31%	35%
900mA	4%	8%	12%	16%	19%	23%	27%	31%
1050mA	3%	7%	10%	13%	17%	20%	23%	27%

### Technical Data

Operating voltage	20~90VDC (if the LED driver output is below 20V or above 90V, HCO11D may work improperly)
Input current	350mA (Min.) ~ 1050mA (Max.) this current range must be strictly followed.
Switched power	Max. 100W
Stand-by power	<0.5W
Detection range	10/50/75/100%, can be customized
Hold-time	5s/3min/10min/30min, can be customized
Daylight threshold	2~50Lux, disable, can be customized
Stand-by period	0s/10s/5min/10min/30min/1h/ $+\infty$ can be customized
Stand-by dimming level	10%/20%/30%/40%/50%/60%/70%/80%, can be customized
Microwave frequency	5.8GHz $\pm$ 75MHz
Microwave power	<0.2mW
Detection range	Max. ( $\phi$ x H ): 12m x 3m
Detection angle	30~150°
Mounting height	3m
Operating temperature	-20°C ~ +60°C
IP rating	IP20
Certificate	Semko, CB, EMC, CE, R&TTE, SAA