



LLC  
LLV

## Features

- Active control of artificial lighting
- 0-10Vdc or 4-20mA output
- Maximum energy efficiency
- Four selectable ranges:  
0-1000lux  
0-10000lux  
0-50000lux  
0-100000lux
- Optimise light levels
- Precalibrated in Lux for ease of installation

## Technical Data

<b>Power supply</b>	24Vac/dc (16-36Vdc) current consumption max.10mA at 24Vdc
<b>Sensor</b>	photodiode
<b>Measuring range</b>	0-1000Lux/10klux/50klux/100klux switchable via dip-switch.
<b>Output</b>	4-20mA 0-10Vdc
<b>Ambient temp.</b>	-30...+70degree
<b>Electrical connect.</b>	1,5mm <sup>2</sup> via terminal screws on circuit board, shielded cable.
<b>Measuring error</b>	< +/- 10% of final value
<b>Protection class</b>	IP54 according to IEC529
<b>Standards</b>	CE conformity, electromagnetic compatibility according to EN 61326 EMC directive 89/336/EWG

## Application

LLC/LLV is an external light level transmitter designed for use in the active control of artificial lighting.

LLC/LLV is made to optimise light levels and to achieve maximum energy.

LLC/LLV is build and dseigned for outdoor facilities.

The high levels of lux is used for sunshade systems.

The light level increases or decreases automatically via control equipment depending on the level of light alternative swithc off/ on depenping on lux value.

## Design Features

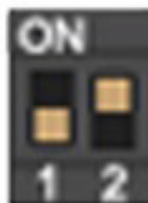
LLC/LLV transmitters use photo-diode cells to detect light levels in a selection of lux ranges, providing a linear 0-10Vdc or 4-20mA signal.

The measuring range for LLC/LLV is easily set by a dip-switch.

## Measuring Ranges



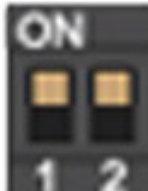
0-1000lux



0-50000lux



0-10000lux



0-100000lux

## Ordering Codes

<b>LLC 420</b>	External light level transmitter 4-20mA selecteable ranges
<b>LLV 010</b>	External light level transmitter 0-10Vdc selecteable ranges



# External Light Level Detector

# LLC LLV

July.15

## Installation and Connection Details

All connections to BEMS controllers, data recorders etc. should be made using screened cable.

Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise.

Low voltage signal and supply cables should be routed separately from high voltage or mains cabling.

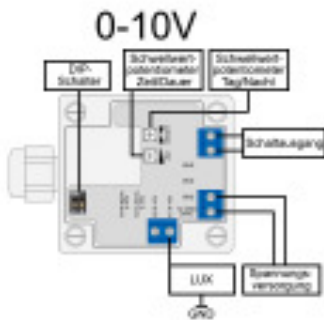
Separate conduit or cable tray should be used.

Where possible, the controller's earth should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth.

This will provide better immunity to high frequency noise.

Most modern buildings have a separate earth for this purpose.

## 0-10Vdc



## Dimensions



## Operational Data

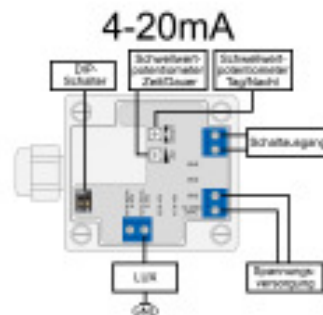
### Typical Daylight Conditions:

Dusk	15-20lux
Average daylight	2000lux
Bright sunlight	20000+lux

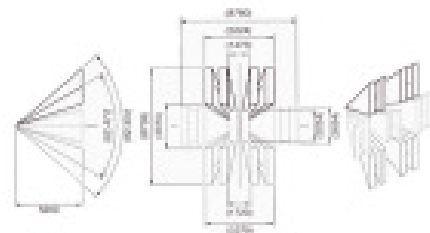
### Service Illuminations:

Minimum for outdoor areas	25lux
Exterior walkways & car parks	50lux
Industrial circulation areas, stores etc	150lux
Minimum task lighting	200lux
General offices & retail areas	500lux
Fine task, machine operation, precision ass.	1500lux

## 4-20mA



## Coverage



Whilst every effort has been made to insure the accuracy of this specification, AP cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice