DSL DALI SMART LINK

The smart solution for BMS and integrated lighting control

DSL Environmental Monitor

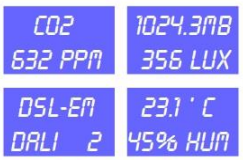
A BMS aims to create a pleasant and productive environment. A large aspect of this is ventilation. Excessive ventilation wastes energy: too little and occupants feel sleepy or unwell. Demand Controlled Ventilation (DCV) saves energy by controlling ventilation based on the measured levels of CO2 in each area.

Any occupied enclosed space will rapidly exceed comfortable CO2 limits without ventilation: an office fairly sparsely occupied by 1 sedentary person for every 100 sq.ft will exceed 1000 ppm CO2 in about half an hour, above which concentration and productivity falls, and the likelihood of accidents increases.

Recognising the importance of air quality, DCV is now required by building codes in some jurisdictions, just as there are legal obligations for illumination levels.

DSL-EM is a DALI-compatible and entirely DALI-powered sensor in a standard thermostat enclosure which measures a range of environmental quality parameters: CO2, temperature, humidity, and illumination. It is a one-device solution for controlling all aspects of the indoor environment.

LCD PAGES



Key Features

- Calibrated temperature, humidity, light level and CO2 measurements in a standard wall thermostat package.
- Measurements updated every 8 seconds a displayed on LCD and reported to BMS via DALI.
- Programmable high-brightness beacon and audible alarm when specified CO2 level is exceeded.
- Alarm silence and menu button.
- Exceeds the Green Building Standards Code for Demand Control Ventilation.
- CO2 measurements are made using the most accurate method (ratio of IR absorbance at two wavelengths), avoiding calibration drift due to device ageing and the need for Automatic Baseline Calibration (ABC) as used in most sensors.

The DaliSmartLink Difference

- Unlike low-power sensors which use Automatic Baseline Correction, the DSL-EM is accurate out-of-the-box and in environments which never experience fresh air, such as rooms in use 24 hours, factories, urban environments and agricultural facilities.
- The DSL-EM CO2 measurements are fully compensated for air density (pressure, temperature, humidity).
- The DSL-EM uses a power-harvesting, load-balancing design to allow it to give real-time CO2 readings using the most accurate (but power-hungry) NDIR method while taking just 7 mA from the DALI bus – less than a room occupancy/lux sensor.
- Smallest package possible: fits in a 80 mm (single-pattress sized) thermostat box.

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QuickLink SOLUTIONS

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Technical Data

Sensor Performance

Parameter	Reported Range	Resolution	Accuracy
Temperature	10 – 35 °C	0.1 °C	0.4 °C
Humidity	0 – 100 %	1.00%	2 % typical, 3 % maximum
Pressure	700 – 1100 mb (hPa)	0.1 mb (hPa)	2 mb (hPa)
Light level	0 – 6000 lux	2 lux	2 % (>100 lux)
CO_2	0 – 5000 ppm	20 ppm	<60 ppm (0 - 2000 ppm)

DALI

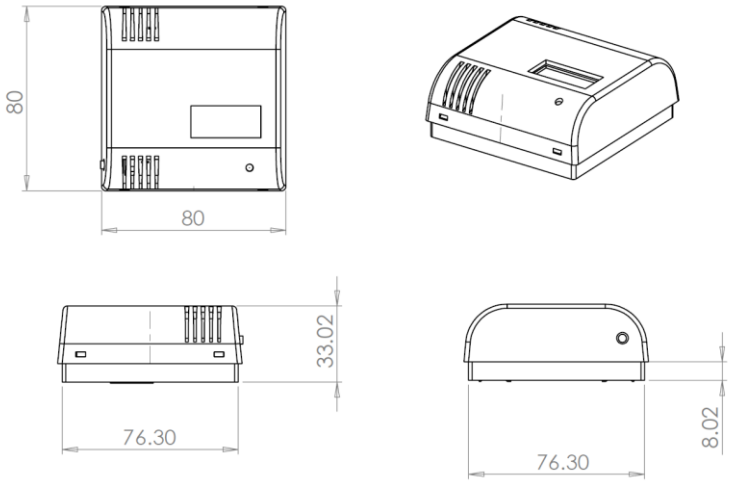
Cabling 0.5 mm^2 – 1.5 mm^2 (DALI cables must be mains rated) plus Earth connection

Bus power 16 VDC – 22.5 VDC (DALI standard): 7 mA quiescent (network planning purposes)
+17 mA (for 1 s) during CO2 sampling; +30 mA (for 1 min) every 24 h for cleaning
DSL-EM on the same network are synchronised so that only one is non-quiescent

Mechanical

Dimensions 80 mm x 80 mm x 33 mm

Housing IP30 ABS wall-mounted thermostat box, blue backlit 8x2 character LCD screen



Environmental

Operating 0 °C to 50 °C, non-condensing humidity

Storage -20 °C to 85 °C, non-condensing humidity

Standards

EMC EN 61326 (Electromagnetic Compatibility)
EN 55024 (Information Technology Immunity)

Environmental WEEE, RoHS, Conflict Minerals

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