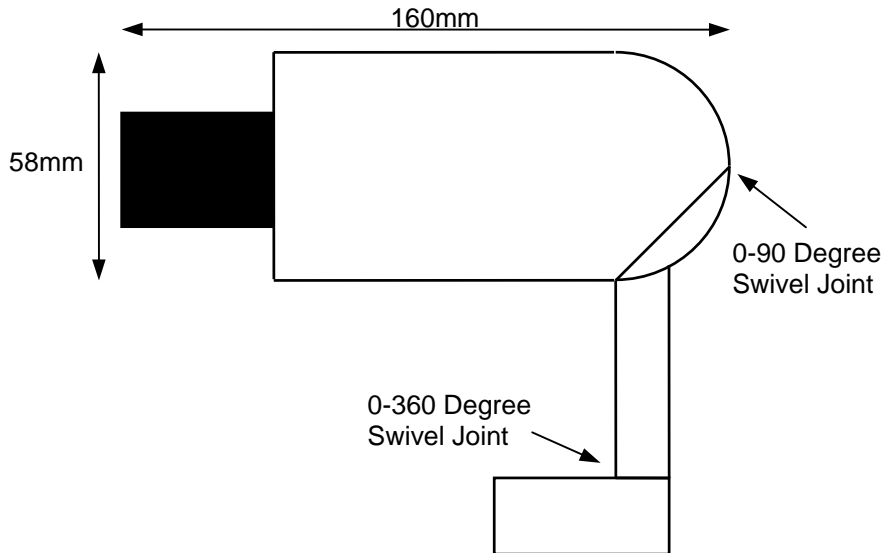


The Intelligent Light Sensor – NILS1/NILS1C



- Designed as a wall-watching device, the sensor can be discretely mounted, usually on the same track as the light fittings. It features an advanced microprocessor-based design with 4-20mA output and remote calibration.
- The standard sensor, NILS1, has an optical response similar to the human eye. For more demanding applications, where there are many differing light sources, there is a fully CIE photopic response compliant sensor, NILS1C. Both sensors provide a reading in Lux between 0 and 600 with a resolution of ± 2.5 Lux. A typical value being 200 Lux for a gallery environment (other ranges can be specified).
- The standard lens fitted to the sensor gives an angular spread of approximately 10 degrees, giving an 80cm square monitoring area, at 5m from the sensor.
- An RS-422 serial line is used for communication and several sensors can be networked on the same serial connection, giving a dramatic saving in cabling cost.
- The 4-20mA industry standard current loop driver output is usually connected to a Building Management System or custom lighting control system to adjust the artificial light levels and control electro-mechanical blinds to modulate the natural lighting.
- The sensor is normally supplied mounted in an ERCO Domotec 77201/71041 light fitting as shown above. The larger ERCO Domotec 77231, other ERCO fittings or custom fittings can also be used.
- Once fixed in position, the sensor has complete hemispherical movement for precise targeting of the monitoring area.

Electrical Specification

- Power supply: 100mA @ 15v
- Serial interface: RS-422 at 9600 baud - connect to RS-232 for short (<20m) cable runs.
- Current interface: Active driver, 4-20mA into 100R/250R nominal load (must be passive).

Calibration

Because the sensor is detecting the reflected light and not the incident light on the wall, it must be calibrated once it is installed, and re-calibrated if the painting or wall that it is monitoring changes. The sensor is normally calibrated using the serial link, but other options are available.

A calibration program (wcalib.exe for Windows, calib.exe for DOS) is supplied which will run on any PC compatible. The PC should be connected to the serial link, which is normally run via a RS232-RS422 Line Driver to a wall outlet in the appropriate room in the gallery.

The calibration is straightforward:

- 1) Run the software, the display will show a tracking graph of the sensor reading.
- 2) Select the sensor of interest by pressing a number (1-9, a-c).
- 3) Point the light sensor at the desired place on the wall.
- 4) Ensure that the lighting conditions are stable, i.e. the natural light level is not varying.
- 5) Measure the light level on the wall with a hand-held light meter.
- 6) Press 's' on the keyboard and type the light level in LUX followed by the 'enter' key, or press 's' again for the windows version.
- 7) The main display shows the calibration taking place. This takes up to 10seconds.

During the calibration the lighting conditions should remain stable else the calibration will not give the desired light level.

Typical Application

National Gallery Configuration

