

The Complete Wireless Solution for Monitoring, Controlling & Energy Metering of Outdoor Lighting - A SELC-Menolinx Product

SELC Wireless Cell

Smart Efficient Light Control

 **SELC**
Power Behind Light



The SELC Wireless Cell Range

The SELC Wireless Cell range enables you to control lighting systems over any size or geographical area, efficiently and cost-effectively (the "system"). This system can be integrated into any location or lighting system, no matter how large or small utilising the NEMA twist lock or hardwired configuration. The system integrates RF cellular and wire line communication technologies to make it an adaptable solution for indoor and/or outdoor use. This makes it ideal for providing lighting solutions for malls, industrial plants, warehouses, or even larger areas such as neighbourhood street lighting, highways lighting, tunnels lighting and all types of outdoor lighting. The solution can easily be scaled to cover an entire city or combination of cities as needed.

This innovative lighting control system enables you to remotely communicate with and issue commands to individual lamps or to groups of lamps. The system provides a variety of flexible options to meet the full range of remote lighting control and management needs including a class 3 pseudo energy meter capability. Each Concentrator unit can control up to 230 individual wireless cells as well as other peripherals such as power meters, PLCs, and local I/O devices.

The SELC Wireless Cell system is designed for use with a variety of HID Magnetic and Electronic Ballasts. The wireless cell models 103, 104 and 105 are configured to monitor and control the complete range of SELC Smart Electronic Ballasts or other Electronic Ballasts incorporating DALI, Candelon and 0 - 10 volts communication protocols or any other outdoor devices using energy or requiring monitoring and control.

With the SELC Wireless Cell system, you can customise the control settings of the lamps or other devices individually or by groups according to high and low traffic times, changes in seasons, special dates, I/O device triggers and other required factors. You can also monitor the status of each lamp or device in accordance with its temperature, energy consumption, current usage, etc. The SELC Wireless Cell Range can also be incorporated into upper layer enterprise control systems. The precision control-level allowed via the Class 3 Energy Meter enables customers to centralise energy management that can result in significant energy savings and the reduction in maintenance, personnel, special utility vehicle and night scouting costs.

Analyzing Your Lighting Network Needs

In order to facilitate rapid deployment of the SELC Wireless Cell, it is necessary to analyse your lighting network needs and assemble information about the following areas:

- » Date and Time Lighting Settings
- » Special Dates and Time Requirements (holidays and special events)
- » GPS Coordinates
- » Registration
- » Division Among Zones or Groups
- » Special Areas
- » Input-Device Activations
- » Output Activations

Benefits

Energy and carbon emission reduction, reduced operating costs, can be easily retro-fitted into existing lighting installations, NEMA Twist Lock or Hard Wired installation, complete range of Wireless Cells One Part and Two Part Wireless Cells for basic to advanced requirements. Class 3 Energy Measurement for remote energy metering and the provision of energy and operation statistics instantly. The SELC Wireless Cell is another world's first for SELC and it has a unique network recovery capability and novel lamp scoping.

"The world's first wireless photocell"

Patent No: 84878

SELC Wireless Cell Features

The SELC Wireless Cell Monitoring and Control system runs on a propriety mesh network and will monitor, control and measure the energy in a wide range of outdoor lighting installations and other devices. The SELC Wireless Cell features include:

- » **Efficient Operation:** System operators can easily interact with the lighting control system, monitor live data from the lamps, and perform on/off and dimming operations for lamps and groups of lamps.
- » **Secure Remote Access:** Authorised system operators have secure, remote access, while keeping unauthorised users away from sensitive applications.
- » **Seamless Interface to External Data:** The Smart Cell platform is open, interoperable and offers seamless connectivity to external application via standard interfaces.
- » **Easy Activation:** Performs manual or smart activation and dimming for small and large areas based on a predefined scheduler-secure, user-friendly interface.
- » **Instant Feedback:** Receives continuous, instant display of critical energy-usage parameters, including power, voltage, current, temperature and actual runtime or work time.
- » **Plug & Play Capability:** Performs lamp registration of individual lamps or groups of lamps installed in any building zone or facility area.
- » **Lamp Addressing:** Switches On/Off or dims single lamps, zones, or groups of lamps to prevent over lighting or under lighting of large areas.
- » **I/O Activation:** Designs an event-driven system using 12 digital inputs, 4 digital outputs, and two analog inputs for activation and feedback with external devices.
- » Built-in Spread Spectrum Frequency Hopping (SSFH) radio transceiver.
- » Cyclic Redundancy Check (CRC) and Forward Error Correction (FEC).
- » Carrier Sense Multiple Access (CSMA) for each network device.
- » Advanced half-duplex communication.
- » True mesh network system converts each unit into a smart repeater.
- » Built-in anti-collision mechanism.
- » Broadcast and addressed transmission.
- » Unique MAC address for each device.
- » Programmable 0-15 dBm output power.
- » Plug & Play field installation (no need for RF specialist).
- » Automatic network rebuilds.
- » Self-learning network entities.
- » Automatic add/delete/edit nodes capabilities.
- » Node redundancy mechanism with minimum 2 node communication.

The SELC Wireless Cell Range

Model WC 101 A NEMA twist lock socket configured wireless data link photocell with basic monitoring and control of road and street lights for the elimination of night scouting.

Model WC 102 Same specification as the WC101 configured for hard wired installations where vandalism is a serious problem.

Model WC 103 A NEMA twist lock socket configured wireless data link photocell with a class 3 pseudo Smart Energy Meter for monitoring and control and energy measurement of road and street lights.

Model WC 104 Same specification as the WC 103 hard wired configured wireless data link photocell with a class 3 pseudo Smart Energy Meter for full monitoring and control and energy measurement of road and street lights with DALI, 0-10V and Candelon communications protocols.

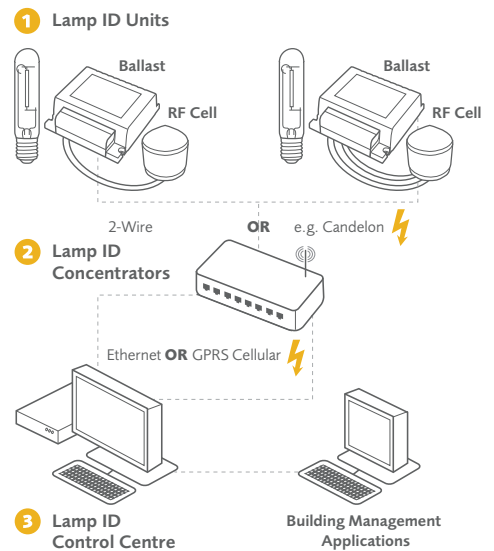
Model WC 105 Available as either NEMA socket configured or hard wired same specification as WC 103/104 with the additional features of lamp scoping and daytime energy saving.

Note: All of the above range is also available in a Two-Part configuration. When ordering include the letters TP after the model number to denote a Two-Part configuration is required.

Technical Specifications

Input Voltage	90-265V AC
Power Consumption	< 1W
Communication	RS-232, RS-485, RF
Ambient Light Detector	Glass filtered photo diode
Switch on/off levels and ratios	Standard 70 LUX 1.0.5, 1.1, 1.2 (other programmable levels available)
Operating Temperatures	-30°C to +80°C, 95% Humidity
Environmental	IP67, Vibration to BS5972
Surge Protection	160, 320 or 640 Joule Metal Oxide Varistor (if specified)
Compliance	FCC, CE and UL standards and requirements
Transmission Frequencies	433/868/915 MHz

Lighting Control Triple-Layer Architecture # Layer Description



- 1** The Concentrator can control up to 230 Individual lamps.
- 2** The SELC Wireless Cell controls the Individual road and street lamps via wireless communication.
- 3** The Control Centre controls the Wireless Cells through the Concentrators via wired or cellular communications.



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