Data Sheets – MKIV Sub Master

ENERVEO

Control commands issued by the Mayflower Central Management System (CMS) are propagated from the Sub Master which acts as the wireless gateway between the Back Office System and the Nodes.

The Sub Master communicates with the Back Office System via secure GPRS 2G/3G/4G LTE CAT 4 links. Up to 500 Mayflower Nodes can be connected to a single Sub Master using a wireless mesh open-communication protocol called ZigBee©.

Product Code

SMIV/DALI - S6000/ANSI
SMIV/0-10V - S6000/ANSI

Switching

Energy efficient latching relay
Relay rating: 16A, 250V high in-rush

Switching Control & Sensors

Photo sensors x 3 & supports Astral clock & switching actions (7-day programmer) x 5
Vibration sensors
WIFI
Bluetooth
LoRaWAN Gateway variant available

Elexon Charge Code

9800003004100 9800003005100
9800003006100 9800004002100

Switching

Energy efficient latching relay
Relay rating: 16A, 250V high in-rush

Power Supply

Voltage: 230V 50Hz
Power consumption: <4W Supply
Voltage surge protection: 2KV
Over current protection required:
10A BS88 or equivalent

Enclosure

IP67
UV stable Flame retardant
Compatible with S6000 socket or ANSI Standard C136.41

Measurement

Energy meter microchip
Accuracy: +/-1%
Voltage span: 200 to 265 VAC, 50/60Hz
Current span: 50mA to 4A
Wattage span: 1W to 1000W

Microcontroller

Flash programmable CPU Brown-out protection Watch-dog timer protection
Run time clock plus 48hr supply protection

Back Office Communication

GPRS 2G/3G/4G LTE CAT 4 links
Multi network provider enabled
Network security: Secure Socket Layer (SSL)

Node Communication

Zigbee IEEE 802.15.4 Licence free
Multi-channel Dynamically configured mesh networking
Self-healing capability Range: Upto 200m

Ballast Communication Protocols

DALI (Digital Addressable Lighting Interface)
0 to 10V (analogue)

Patent Number

GM23272160

Radio Transceiver

Frequency: 2405-2480MHz
Modulation: O-QPSK
Output power: <10 dBm

Data Sheets – External Node

ENERVEO

An external Mayflower node is installed onto a luminaire to control the on/off/dim function and reports back energy consumption information. It is installed using either the Mayflower S6000 socket or an ANSI Standard C136.41 compliant dimming receptacle.

The Node receives lamp control commands from the Mayflower Sub Master.

The Node monitors and records measurement data and can alert the user to potential fault issues, such as a change in lamp status.

Product Code

SMIV/DALI - S6000/ANSI
SMIV/0-10V - S6000/ANSI

Elexon Charge Code

9800010010100

Power Supply

Voltage: 230V 50Hz
Power consumption: <1W
Supply voltage tolerance: +10% to -6%
Voltage surge protection: 2KV
Over current protection required: 10ABS88 or equivalent

Enclosure

IP67
UV stable
Flame retardant
Compatible with Mayflower
Electrical and mechanical inter-connection; S6000 socket or ANSI Standard C136.41

Measurement

Energy meter microchip controls up to four electronic drivers in one luminaire package
Accuracy: +/-1%
Voltage span: 90 to 265 VAC, 50/60Hz
Current rating: 4A maximum

Switching

Energy efficient latching relay
Relay rating: 16A, 250V high in-rush

Microcontroller

Flash programmable CPU
Brown-out protection
Watch-dog timer protection
Run time clock plus 48hr supply protection

Node Communication

Zigbee IEEE 802.15.4
Licence free
Multi-channel
Dynamically configured mesh networking
Self-healing capability
Range: up to 200m

Ballast Communication Protocols

DALI (Digital Addressable Lighting Interface)
0 to 10V (analogue)

Radio Transceiver

Frequency: 2405-2480MHz
Modulation: O-QPSK
Output power: <10 dBm
Temperature: -30degC to +70degC

Approvals

UK/EU Approvals
EN55015:2006 + A1 + A2
EN61547:2009
EN 301 489-1:2011
FCC 47 CFR Part 15 Class A
FCC Part 15 Subpart C, 15.247
EN 300 328
IEC 61347-2-11:2011
IEC 61347-1:2007 + A2:2012
IEC 61010 1:2010
ETSI EN 019-2-4: V2.2.2

CE

AUS/NZ Approvals
AS/NZS 61010.1:2003
AS/NZS 4268:2012+A1:2013

Data Sheets – Internal Node

ENERVEO

An internal Mayflower node is installed within a luminaire to control the on/off/dim function and reports back energy consumption information. It has been designed to fit within a luminaire body for situations where it is not practical or aesthetically pleasing to fit an external control solution e.g. bollards, signs, heritage and designer lanterns.

In conjunction with the Mayflower Antenna, the Mayflower Node receives lamp control commands from the Mayflower Sub Master. The Mayflower Node is able to monitor, record and transmit measurement data, as well as alerting the user to potential fault issues.

Product Code

INTIII/DALI
INTIII/0-10V

Antenna

IP65
11mm fixing hole

Elexon Charge Code

9800010011100

Power Supply

Voltage: 230V 50Hz
Power consumption: <1W
Supply voltage tolerance: +10% to -6%
Voltage surge protection: 2KV
Over current protection required:10A BS88 or equivalent

Enclosure

IP42
UV stable
Flame retardant

Measurement

Energy meter microchip
Accuracy: +/-1%
Voltage span: 200V to 260V
Current span: 50mA to 4A
Wattage span: 1W to 1000W

Microcontroller

Flash programmable CPU
Brown-out protection
Watch-dog timer protection
Run time clock plus 48hr supply protection

Switching

Energy efficient latching relay
Relay rating: 16A, 250V high in-rush

Node Communication

Zigbee IEEE 802.15.4
Licence free
Multi-channel
Dynamically configured mesh networking
Self-healing capability
Range: Up to 200m

Ballast Communication Protocols

DALI (Digital Addressable Lighting Interface)
0 to 10V (analogue)

Radio Transceiver

Frequency: 2405-2480MHz
Modulation: O-QPSK
Output power: <10 dBm
Temperature: -20°c to +65°c

UK/EU Approvals

EN55015:2006 + A1 + A2
EN61547:2009
EN 301 489-1:2011
FCC 47 CFR Part 15 Class A
FCC Part 15 Subpart C, 15.247
EN 300 328
IEC 61347-2-11:2011
IEC 61347-1:2007+A2:2012
IEC 61010 1:2010

AUS/NZ Approvals

AS/NZS 61010.1:2003
AS/NZS 4268:2012+A1:2013

Data Sheets - S6000 Socket

ENERVEO

Often referred to as a NEMA socket, the S6000 is a patented socket designed around the lighting industry's standard photocell socket (BS5972). The S6000Socket allows the installation of external Mayflower Nodes or Sub Masters to lanterns.

The unique design provides three additional connections required for communication with either DALI or0-10V ballasts.

The socket can be used with both the Mayflower external Node and Sub Master. It can also be used with a standard photocell if the installation of the Node/Sub Master is to take place after lantern installation.

UK Patent Number

2480091B

UK Patent Number

2480234B

US Patent Number

9,077,112

South African Patent Number

2012/08383

Australian Patent Application Number

2011249592

European Patent Application Number

11719055.3

Japanese Patent Application Number

2013-508556

Product Code

S6000

Type

BS5972

Voltage Rating

230V 50Hz

Current Rating

10A

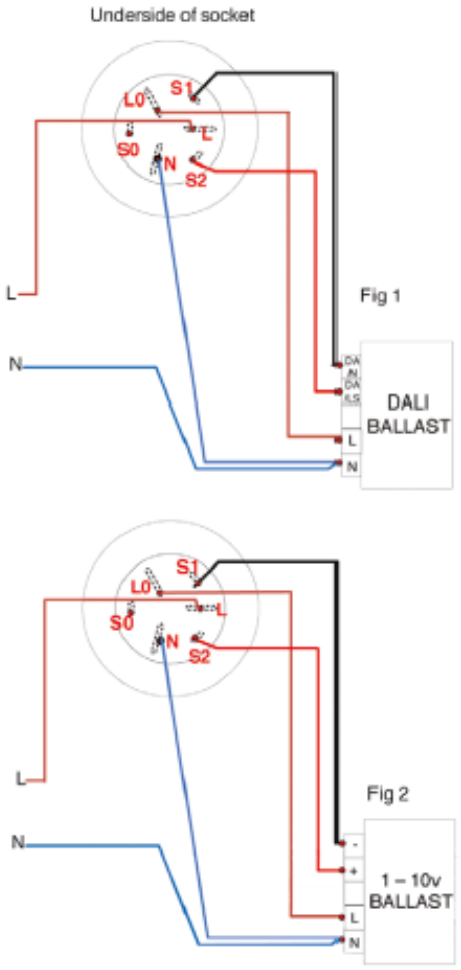
Contacts

Nickel plated Phosphor Bronze

Enclosure

Polycarbonate

Wiring Diagram



Data Sheets - Stub Antenna

ENERVEO

A 2.4GHz Mayflower Antenna providing a tamper resistant solution to enable the Mayflower Internal Node to communicate with the Sub Master.

It is installed through a 20mm hole on the lighting unit. An adhesive foam compression ring provides an IP65 seal.

The Mayflower Antenna is designed to be ground plane independent and is supplied with 700mm low loss cable, terminated with a male SMA connector.

Product Code

AN/ND/T2-STUB

Enclosure

Main body material: Polycarbonate
Black UL94-VO
Fitting: Body mount
Fitting diameter: 20mm
Thread length: 25mm x M20
Lock nut: Nylon
Operating temperature range: -40°c to +80°c

RF Properties

Operating frequency: 2.4-2.5GHz
Antenna type: Quarter wave
Input resistance: 50Ω
VSWR: <2:1
Polarization: Vertical
Peak gain: 2 dBi
Beam width: Omni directional

Cable

Cable type: RG174
Cable length: 70cm
Connector: SMA-Male

Compliance

IP65
RoSH compliance
REACH
UL94-V0
UV stable
CE/IEC 60950-22
IK06 to BSEN50102

Fitting Instructions

When fitting antenna make sure that lantern surface is cleaned and sticker has been removed from adhesive pad, so that Antenna will seal properly to the lantern body.