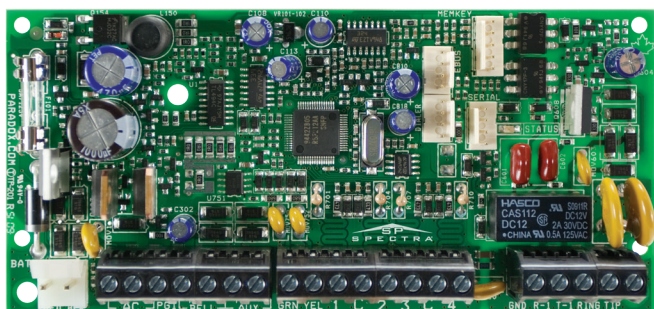


Spectra SP Series

4 to 32-Zone Expandable Security Systems



Description

Spectra SP control panels (SP4000, SP5500, SP6000, SP65, and SP7000) offer a combination of innovative features and an advanced communication bus for a uniquely expandable security system. Through its communication bus, all Spectra SP panels can be expanded via wireless and hardwired expansion modules and a variety of accessory modules. With their in-field firmware upgrade capability, the Spectra SP series allows installers to upgrade their system without hassle – quickly, easily, and on-site. To further facilitate installation, every Spectra SP panel can be configured using easy-to-follow, menu-driven programming.

Spectra SP also features multipath communication; this enables your system to communicate through multiple channels, including telephony with its built-in landline dialer, IP with the IP150 Internet Module, IP/GPRS/GSM with the PCS series module, and voice with the VDMP3 Plug-In Voice Module.

With its reliable communication technology, flexible expansion and user-friendly keypads, Spectra SP is the complete residential or commercial security solution.

Features

- Supports StayD mode
- 4-wire expansion bus
- Wireless expansion (via RTX3 / RX1)
- Expandable to 32 zones
- Expandable to 16 PGMs
- 2 partitions
- 32 user codes
- Supports PCS series modules
- Supports IP150 Internet Module
- Supports VDMP3 Plug-in Voice Module
- Supports REM3 Hand-held Remote Keypad
- Supports SR150 Wireless Siren
- Landline dialer (except SP65)
- In-field firmware upgradable

System Overview

Control Panels



SP65

SP65: 9 to 32-Zone Control Panel
SP4000: 4 to 32-Zone Control Panel
SP5500: 5 to 32-Zone Control Panel
SP6000: 8 to 32-Zone Control Panel
SP7000: 16 to 32-Zone Control Panel

Video Monitoring



HD88

HD88: Outdoor 720p HD Camera
HD78F: Event-Driven Indoor Security IP Camera / Detector

Expansion Modules



ZX82

ZX82: 8-Zone Expansion Module
ZX8SP: 8-Zone Expansion Module
ZX8: 8-Zone Expansion Module
PGM82: 8-PGM Expansion Module
PGM4: 4-PGM Expansion Module
RTX3: Wireless Expansion Module
RX1: Wireless Receiver

Communicator Modules



PCS265LTE

PCS265LTE: LTE / 4G / 3G / 2G / GSM Communicator Module
PCS250 / G: GPRS / GSM Communicator Module
IP150: IP Communicator
VDMP3: Plug-In Voice Module

Software & Accessories



Insite GOLD

Insite GOLD: Mobile App
PS25: 2.8A Supervised Power Supply
PS45: 5A Supervised Bus Power Supply
HUB2: 2 Port HUB
PMCS: Memory Key
307USB: Direct Connect Interface
BabyWare: PC Software
InField: Firmware Upgrade Software

4-wire BUS

Wired Keypads



TM70

TM70: Intuitive Touchscreen
TM50: Intuitive Touchscreen
K32LX: Wired LCD Keypad with Integrated RF Transceiver
K32LCD+: 32-Character Wired LCD Keypad Module
K35: 32-Zone Wired Fixed LCD Keypad Module
K32+: 32-Zone Wired LED Keypad Module
K10V: 10-Zone Wired LED Keypad
K10H: 10-Zone Wired LED Keypad
K636: 10-Zone LED Keypad Module

Wireless Keypads and Remotes



K37

K37: 32-Zone Wireless Fixed LCD Keypad
REM3: Hand-Held Two-Way Remote Control Keypad
REM25: 2-Way Remote Control with Backlit Buttons
REM2: 2-Way Remote Control with Backlit Buttons
REM1: Remote Control with Backlit Buttons
REM15: Remote Control with Backlit Buttons
REM101: Emergency / Panic Remote Control
RAC1: Remote Control with Integrated Access Card

Wireless Devices



PMD85

PMD85: Wireless Outdoor Digital Dual-Optic High-Performance PIR
PMD75: Wireless Digital Dual-Optic High-Performance PIR
PMD2P: Wireless PIR Motion Detector with Built-in Pet Immunity
NV75MR: Wireless 16M Dual Mironel Optics Pet Immune Anti-Mask Detector
NV35MR: Wireless Outdoor / Indoor Window and Sliding Door Dual Detector with Anti-Masking and Pet Immunity
NV780MR: Wireless Dual Side-View Outdoor Detectors with Anti-Masking and Pet Immunity
DCT6: Wireless Door Contact
DCT10: Wireless 2-Zone Long-Range Door Contact
DCTXP2: 2-Zone Wireless Door Contact
DCT2: Wireless Ultra-Small Door Contact
G550: Wireless Glass Break Detector
GS250: Gpower Wireless Multi-axis Detector
SD360: Wireless Ceiling-Mounted Smoke Detector
SR130: Wireless Outdoor Siren with Built-in Strobe Light
SR150: Wireless Outdoor Siren with Built-in Strobe Light
RPT1: Wireless Repeater Module
2WPGM: 2-Way Wireless PGM

For compatibility details, visit us at paradox.com

Feature Details



Internet Communication (IP150)

The IP150 Internet Module allows you to control and monitor your security system remotely through any web browser. It allows for email notifications of important system events such as alarms, arm/disarm events, and troubles. For example, receive an email at work when your kids get back from school. Also, view the live status of your system and arm/disarm it. For instance, you have just left your office for the weekend but are unsure whether you armed the system. Simply check the status of your system from a laptop and arm it.



Wireless Communication (PCS Series)

The PCS series modules provide the Spectra SP control panels with wireless communication capabilities to report system events via IP, GPRS, and/or GSM. Whether it be uploading/downloading via IP or GPRS, receiving system status and events by voice or text message, or reporting to the monitoring station via IP, GPRS, or GSM, the PCS series enhances the communication capabilities of any Spectra SP installation.



Voice Communication (VDMP3)

The VDMP3 is a plug-in, voice-assisted module that can be programmed to call up to five telephone numbers in the event of an alarm. For example, when an alarm occurs at your store during off-hours, every employee can receive notification via telephone. You can also call the VDMP3 from an outside line, enabling you to arm or disarm the system as well as activate PGMs. The VDMP3 essentially turns any outside telephone into a keypad. The VDMP3 is easy to install; plug it in directly onto the panel, set the phone numbers, and select the activation event.



StayD

StayD resolves all issues with common security systems and represents the only solution for secure living. The revolutionary StayD feature represents a completely reversed philosophy compared to all other security systems made today. Traditional systems share the same principle - in order to provide security, users must remember to arm the system; otherwise the system is disarmed and does not provide security. A StayD system is always armed, and needs only to be partly disarmed when an entry or exit is needed. With StayD, you can truly have peace of mind knowing, that you are always protected.



In-field Upgradable

Spectra SP is not only easy to install, but is also fully in-field upgradable, allowing for simple on-site updates. The process is effortless; connect the PC to the panel and you are a few clicks away from performing a complete system upgrade within minutes. No need to change panels or hardware; all the updates are performed using Paradox's InField Firmware Upgrade Software.



App-based System Control

The Insite GOLD app enables you to remotely access your Paradox security system and view your system cameras. Insite GOLD provides lots of functionality and information at one's fingertip. It has an intuitive user-interface which enables you to easily connect to your security system and edit settings. Now you can control your Paradox security system from any Android / iOS smartphone.

TM70 Overview



SpotOn Locator™

Upload photos, images, or schematics to eliminate the need for deciphering LED zone lights. These images display any door, window, or motion detector that are active. Since the images are uploaded by the user, they are truly customized, and can be unique to each installation. SpotOn Locator™ is integrated in the original firmware, and when purchased, is unlocked with an authorization code.

OneScreen Monitoring™

Provides a real-time visual display of the system's status on one screen. It allows the user to choose which partitions will be displayed showing arming level, alarm, ready, and troubles. It also displays zone statuses; open, close, bypass, alarm, and tamper. OneScreen Monitoring™ also features Solo Test™ mode, which allows installers and users to easily test all system zone's via the TM70 Touch's screen. OneScreen Monitoring™ is integrated in the original firmware, and when purchased, is unlocked with an authorization code.

Specifications

| | |
|-----------------------|--|
| Display | 16-bit, color LCD; 8.6 x 15.4 cm (3.1 x 5.9 in.), 800 x 480 pixels |
| Input Voltage | 9 to 15 Vdc |
| Current Consumption | 250 mA at max brightness + 80 mA sounder |
| Keypad Zone Input | 1 for a detector or external temperature sensor |
| Tamper | Built-in, cover and wall |
| Humidity | 5 to 90% |
| Operating Temperature | -10 to 55 °C (14 to 131 °F) |
| Compatibility | Swan, EVO, Spectra, Magellan |

Note: All control panel outputs are rated to operate between 11.4 Vdc and 12.5 Vdc.



Specifications PRX2780000033-P2C

The PRX2780000033-P2C is a metal box enclosure for provision multiple module and panel mounting.

Features:

- Many punch-out holes for simple wiring
- Easy door removal
- Sizes: 28cm X 28cm X 7.6cm (11" x11" x 3")

P ▲ R ▲ D O X™



Specifications PRXK-TK278

The PRXK-TK278 is a BOM Kit for 1x tamper switch PRX2502302000-P2C and 1x tamper bracket PRX2781030000-P2C to suit with Paradox Metal Box Enclosure PRX2780000033-P2C; to protect against tampering (opening door or removal from wall).

P ▲ R ▲ D O X™

SP5500+ / SP6000+ / SP7000+ User Guide

4 to 32-Zone Expandable Security Systems



P ▲ R ▲ D O X™

NV5

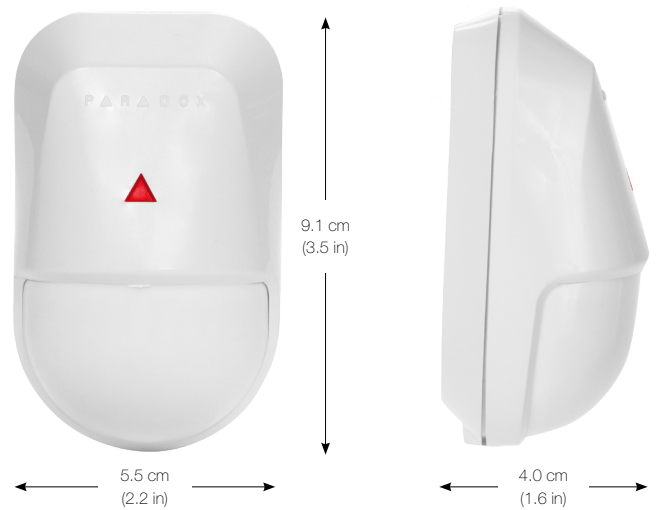
High-Performance Digital Infrared Motion Detector

Description

The NV5 is the entry-level motion detector from Paradox's ENVY line of next generation motion detection. Featuring advanced processing technology, optical technology, and easy installation, the NV5 represents state of the art technology with the most advanced and innovative digital infrared detector of its class.

The NV5 features Paradox's developed optics - a Hybrid Cylindrical / Spherical combination 1.0 inch lens with 3rd generation 3D Lodiff® Fresnel segments- the first and most advanced lens in the detection industry. This combination offers the best detection possible for passive infrared energy reception optimized for far beams (cylindrical) and medium/close beams (spherical). This lens also features Paradox's "Equalized" detection pattern, ensuring equal sensitivity throughout the protected area. Furthermore, the NV5 offers Small Pet Resistance or, alternatively, a Super Creep Zone Mirror add-on optics, which provides superior detection directly below the detector (see Beam Pattern).

The NV5 offers Auto Pulse Signal Processing with two levels of RF rejection, dual or single edge processing, and LED feedback for each setting. With precision and equalized detection, superior detector stability, total area coverage, and complete false alarm protection, the NV5 is the most advanced and innovative digital infrared detector in its class.



Features

- Infrared motion detector managed by Full Authority Digital Electronics Control (FADEC)
- Paradox's Hybrid Cylindrical-Spherical 1.0 inch lens with 3rd generation 3D Lodiff® Fresnel segments- 10 x 10 m (32.8 x 32.8 ft), 90° viewing angle, and 0.5 m (1.6 ft) to max range (no dead zone beam pattern)
- Paradox's equalized detection pattern - ensures equal sensitivity throughout the protected area
- Paradox Super Creep down-looking beam optic option for straight down detection
- Pet Resistance up to 16 kg (35 lb)
- Dual/Single Edge Processing selection - the only one in its class
- Paradox patented Auto Pulse Signal Processing (APSP) with settings for normal or high interference environments
- Digitally equalized temperature compensation; unit performance specifically tailored to obtain same catch capability at all specified operating temperatures
- Digital Sensitivity trimmer adjustment with five range levels and LED feedback, allows for perfect unit adjustment for all room sizes
- Optional wall/ceiling mount bracket
- Miniature yet easy to install with no PCB removal or adjustment
- CE and EN50131 Grade 2 approved (see PARADOX.com for latest approval updates)
- Interchangeable lenses; 90° standard lens

ENVY
SERIESPARADOX
digital
DETECTIONPET
IMMUNITY

Advanced Digital Technology (FADEC)

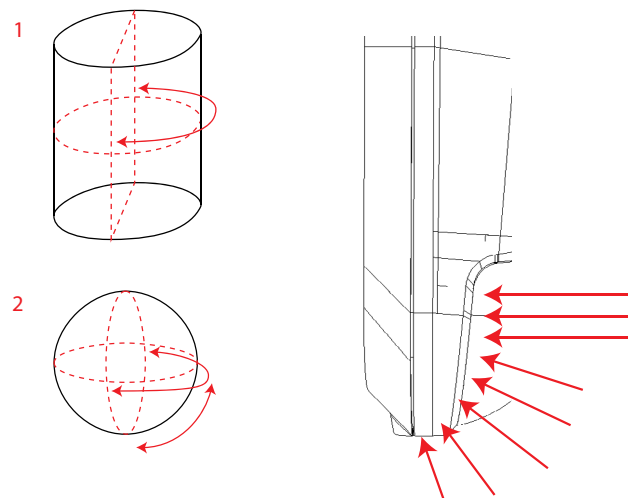
The NV5's digital analysis and algorithms ensure precise and accurate detection performance, managed by Full Authority Digital Electronics Control (FADEC). Depending on the environment application, the NV5 can be easily configured with its unique pre-programmed profile settings (Normal, Moderate, Pet Resistant, and Harsh).

- High-resolution and full-dynamic range digital signal conversion
- High-speed, advanced algorithm, digital signal processing
- Digital EMI / RFI interference rejection
- Five choices of digital range levels (via trimpot)

Advanced Optical Technology

Paradox's Hybrid Cylindrical-Spherical combination offers the best detection possible for passive infrared energy reception for far beams (1. Cylindrical) and medium/close beams (2. Spherical). This lens design allows for ultimate perpendicular beam collection. Superior and uniform energy collection translates to a better image quality of the target which provides unmatched detection accuracy and stability.

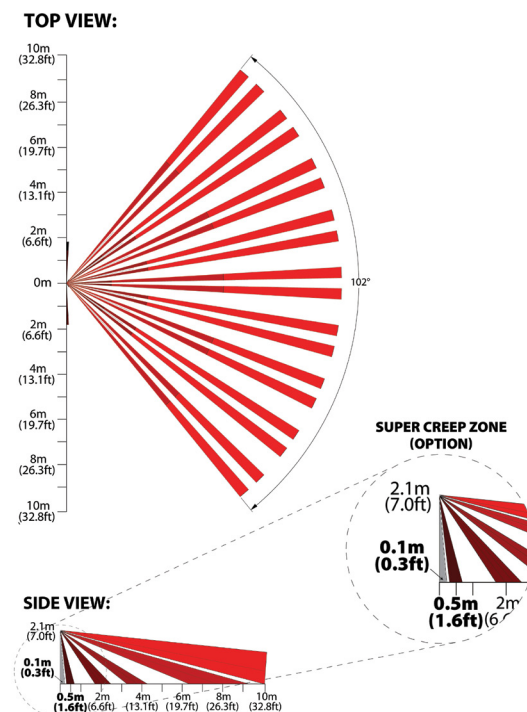
- 3rd generation 3D LoDiff® Fresnel segments
- Optically and digitally equalized beam pattern (all beams optimized for generating equal signal level at any distance or angle)
- Optional Super Creep Zone or Pet Resistance up to 16 kg (35 lb)



Technical Specifications

| | |
|-------------------------|--|
| Installation height | 2.1 m – 3.1 m (7.0 ft – 10.2 ft) For 10 m and above range, unit must be installed at 2.1 m (7.0 ft) height and above |
| Sensor | Dual rectangular element, low noise, high sensitivity, EMI immunity |
| Lens | Hybrid Cylindrical Spherical 3 rd gen. Fresnel Lens, equal beam sensitivity (patent pending) |
| Processing | High resolution digital signal processing. Four profiles (Normal, Medium, Pet Res., Harsh), true digital temperature compensation. |
| Super Creep Zone | Add on mirror option for enhanced creep zone at 0.1 m from the wall (no Pet Resistance) |
| Range adjustment | 5 level range adjustments (50% to 150%) |
| Startup time | 10 seconds |
| Detection speed | 0.2 m/s to 3 m/s (0.6 ft/s to 9.8 ft/s) |
| Power input | 10 Vdc to 15 Vdc |
| Current consumption | 10.5 mA @ Standby / 11.3 mA @ Alarm |
| Coverage | 10 m (32.8 ft) x 90° 0.5 m (1.6 ft) down looking with optional creep zone |
| PET Resistance | Up to 16 kg (35 lb) |
| Alarm indicator | Red LED for 3 seconds |
| Alarm output | Solid State, N.C. 150 mA |
| Anti-tamper switch | N.C. 28 Vdc, 0.15 A |
| Operating temperature | -10°C to 50°C (14°F to 122 °F) |
| Humidity | 95% max. |
| Dimensions | 9.1 x 5.5 x 4 cm (3.5 x 2.2 x 1.6 in.) |
| RFI Immunity | 10 V/m 80 MHz to 2 GHz |
| Environmental standards | Complies with EN 50131 Security Grade 2 / Environmental Class I |

Beam Pattern



Wall/Ceiling Bracket

Wall Mount Bracket

Ceiling Mount Bracket





Specifications PRXK32LCD+-N3Q

The PRXK32LCD+-N3Q is a 32-Character Hardwired LCD Keypad Module.

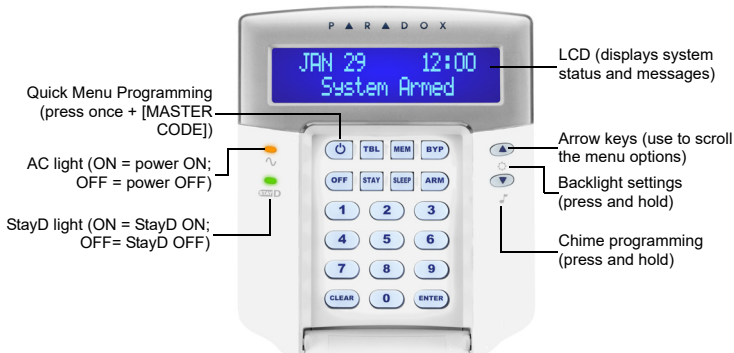
Features:

- Beautiful new design
- 32-character blue LCD with programmable labels
- Real-time zone alarm display (until disarmed)
- In-field firmware upgrade via 307USB
- StayD status LED
- Menu-driven programming for easy system setup (installer and end user)
- 1 keypad zone input
- Independently set chime zones
- 8 one-touch action buttons
- 3 keypad-activated panic alarms
- Adjustable backlight, contrast and scroll speed
- Connects to 4-wire expansion bus
- Compatible with MG5000, MG5050, MG5075, and Spectra SP series V2.31 and up
- Compatible with SP4000, SP65 V4.90 and up

P ▲ R ▲ D O X™

Quick Start

K32LCD+ Keypad



How To Arm

Arming When Exiting (Regular Arm)

To arm your system when exiting:

| Step | Description |
|------|---|
| 1. | Close all zones in the desired partition. |
| 2. | Press [ARM] and enter your [ACCESS CODE]. |

Note: To arm with StayD enabled, refer to the StayD user manual, available at paradox.com. To learn more about StayD, contact your installer.

Arming When Staying (Stay / Sleep Arm)

To arm your system when staying:

| Step | Description |
|------|---|
| 1. | Press [STAY] for stay arming or [SLEEP] for sleep arming and then enter your [ACCESS CODE]. |
| 2. | Select the desired partition (1 or 2). For both, press one, then the other after the beep. |

How to Disarm

To disarm your system when entering:

| Step | Description |
|------|--|
| 1. | Press [OFF] and enter your [ACCESS CODE]. |
| 2. | Select the desired partition (1 or 2). For both, press one, then the other after the beep. |

Panic Keys

To send a silent or audible alarm to your security company, press and hold one of the key combinations listed below, for two seconds.

| Panic Alarm | Key Combinations |
|-------------|------------------|
| Police | Keys [1] & [3] |
| Medical | Keys [4] & [6] |
| Fire | Keys [7] & [9] |

Alarm Memory Display

To view the alarms that occurred during the last armed period:

| Step | Description |
|------|---|
| 1. | Disarm the system. |
| 2. | Press [MEM]. All zones that were breached during the last armed period will be displayed. Use the arrow keys to view the zones. |
| 3. | Press [ENTER] to save and exit. |

Trouble Display

The LCD screen will display all troubles when they occur. To view and clear troubles:

| Step | Description |
|------|---|
| 1. | Press [TBL]. |
| 2. | Scroll through the list of troubles using the arrow keys. Refer to the MGSP User Guide for trouble descriptions and instructions. |
| 3. | Perform the recommended repair instructions to clear the trouble. If no instructions are given, contact your security company. |
| 4. | Press [CLEAR] to exit. |

How to Bypass Zones

When a zone is bypassed, it remains unarmed when the corresponding area is armed. To bypass zones:

| Step | Description |
|------|--|
| 1. | Press [BYP]. |
| 2. | Enter your [ACCESS CODE]. |
| 3. | Select the zone you want to bypass by entering the zone number, e.g., zone 3=03. |
| 4. | Press [Enter]. |



Specifications DFMSC03/CO/TOP

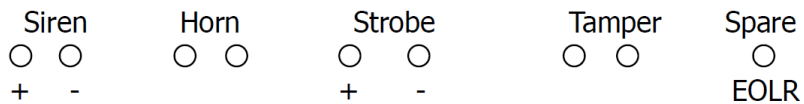
The DFMSC03/CO/TOP is the siren cover kit.

This siren cover kit comes with:

- UV treated plastic cover
- Combo Siren/Horn, 8 Ω /15W
- LED Strobe (Water-proof), 50mA
- Reed tamper switch
- Top hat piezo, 90mA @ 105dB
- 7-Way terminal block (pre-wired)

Total current draw for DFMSC03/CO/TOP is 590mA.

Operating voltage is 12VDC.





VRLA 12V7AH

SA12V7

Specifications

| | | | |
|----------------------------------|--|-------------------------------|------|
| Nominal Voltage | 12 V | | |
| Nominal Capacity 20HR | 7.0 AH | | |
| Dimensions | Length | 151±1mm (5.94 inches) | |
| | Width | 65±1mm (2.56 inches) | |
| | Container Height | 95±1mm (3.74 inches) | |
| | Total Height (with terminal) | 100±1mm (3.94 inches) | |
| Approx Weight | Approx 2.10 kg (4.63 lbs) | | |
| Terminal | F1 | | |
| Container Material | ABS Plastic | | |
| Lead Material | Purity Lead 99.995% | | |
| Sulfuric Acid | Distilled Sulfuric Acid (Zero metal content) | | |
| Separator | AGM | | |
| Rated Capacity | 7.00 AH/0.350A | (20hr, 1.80V/cell, 25°C/77°F) | |
| | 6.53 AH/0.653A | (10hr, 1.80V/cell, 25°C/77°F) | |
| | 6.00 AH/1.20A | (5hr, 1.75V/cell, 25°C/77°F) | |
| | 5.37 AH/1.79A | (3hr, 1.75V/cell, 25°C/77°F) | |
| | 4.55 AH/4.55A | (1hr, 1.60V/cell, 25°C/77°F) | |
| Max. Discharge Current | 105A (5s) | | |
| Internal Resistance | Approx 23mΩ | | |
| Operating Temp.Range | Discharge | : -15 - 50°C (5 - 122°F) | |
| | Charge | : 0 - 40°C (32 - 104°F) | |
| | Storage | : -15 - 40°C (5 - 104°F) | |
| Nominal Operating Temp.Range | 25±3°C (77±5°F) | | |
| Cycle Use | Initial Charging Current less than 2.1A. Voltage 14.4V - 14.7V at 25°C (77°F) Temp.Coefficient -30mV/°C | | |
| Standby Use | No limit on Initial Charging Current Voltage 13.5V - 13.8V at 25°C (77°F) Temp.Coefficient -20 mV/°C | | |
| Capacity affected by Temperature | 40°C | (104°F) | 103% |
| | 25°C | (77°F) | 100% |
| | 0°C | (32°F) | 86% |
| Self Discharge | Sentry AGM series batteries may be stored for up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. | | |

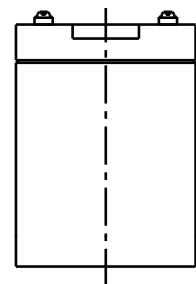
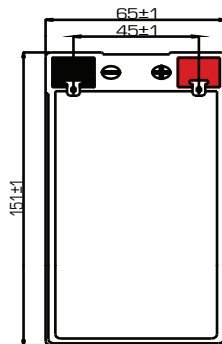
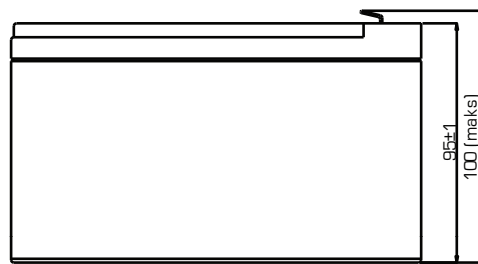
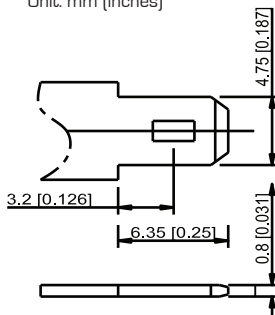


Applications

- All purpose
- Standby Applications
- Recreation Vehicles
- Uninterruptible Power Supply (UPS)
- Electric Power System (EPS)
- Fire & Security
- Generators
- Medical Equipment

Dimensions

F1 Terminal Unit: mm (inches)



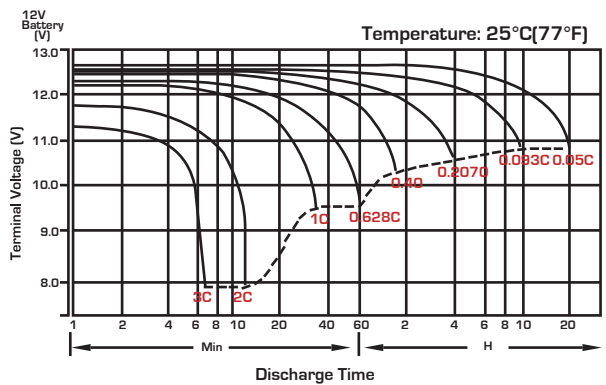
Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1.85V/cell | 18.0 | 12.8 | 10.48 | 8.79 | 6.53 | 4.79 | 3.86 | 2.29 | 1.69 | 1.36 | 1.14 | 0.98 | 0.774 | 0.640 | 0.345 |
| 1.80V/cell | 21.4 | 14.3 | 11.4 | 9.44 | 6.94 | 5.05 | 4.03 | 2.38 | 1.74 | 1.40 | 1.17 | 1.01 | 0.791 | 0.653 | 0.350 |
| 1.75V/cell | 24.2 | 15.6 | 12.2 | 10.0 | 7.29 | 5.27 | 4.18 | 2.45 | 1.79 | 1.43 | 1.20 | 1.03 | 0.805 | 0.663 | 0.357 |
| 1.70V/cell | 26.7 | 16.7 | 12.9 | 10.5 | 7.59 | 5.46 | 4.32 | 2.51 | 1.83 | 1.46 | 1.22 | 1.05 | 0.817 | 0.672 | 0.361 |
| 1.65V/cell | 28.8 | 17.7 | 13.5 | 10.9 | 7.86 | 5.62 | 4.46 | 2.57 | 1.86 | 1.48 | 1.23 | 1.06 | 0.826 | 0.680 | 0.365 |
| 1.60V/cell | 30.6 | 18.6 | 14.1 | 11.3 | 8.09 | 5.76 | 4.55 | 2.61 | 1.89 | 1.50 | 1.25 | 1.07 | 0.834 | 0.685 | 0.367 |

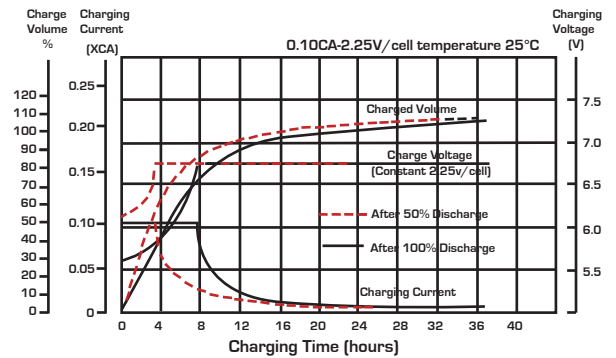
Constant Power Discharge (Watts/Cell) at 25°C (77°F)

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1.85V/cell | 34.2 | 24.5 | 20.2 | 17.1 | 12.8 | 9.44 | 7.64 | 4.56 | 3.37 | 2.72 | 2.29 | 1.99 | 1.565 | 1.296 | 0.701 |
| 1.80V/cell | 40.2 | 27.2 | 21.9 | 18.3 | 13.5 | 9.91 | 7.96 | 4.72 | 3.47 | 2.79 | 2.34 | 2.03 | 1.593 | 1.318 | 0.708 |
| 1.75V/cell | 45.1 | 29.5 | 23.3 | 19.3 | 14.2 | 10.3 | 8.23 | 4.85 | 3.55 | 2.85 | 2.39 | 2.06 | 1.616 | 1.344 | 0.719 |
| 1.70V/cell | 49.2 | 31.3 | 24.5 | 20.1 | 14.7 | 10.6 | 8.48 | 4.96 | 3.62 | 2.89 | 2.42 | 2.09 | 1.633 | 1.347 | 0.725 |
| 1.65V/cell | 52.6 | 32.9 | 25.5 | 20.8 | 15.2 | 10.9 | 8.73 | 5.05 | 3.68 | 2.93 | 2.45 | 2.11 | 1.649 | 1.359 | 0.731 |
| 1.60V/cell | 55.5 | 34.3 | 26.3 | 21.5 | 15.5 | 11.2 | 8.88 | 5.12 | 3.72 | 2.96 | 2.47 | 2.13 | 1.660 | 1.367 | 0.734 |

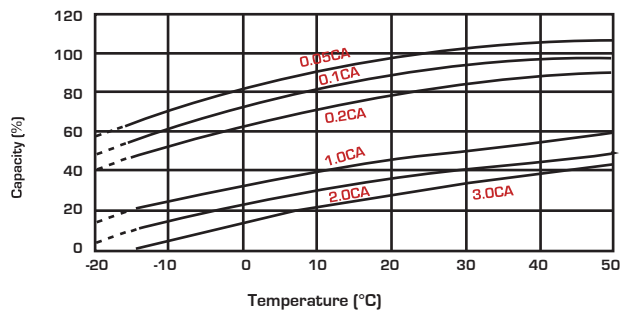
Discharge Characteristics



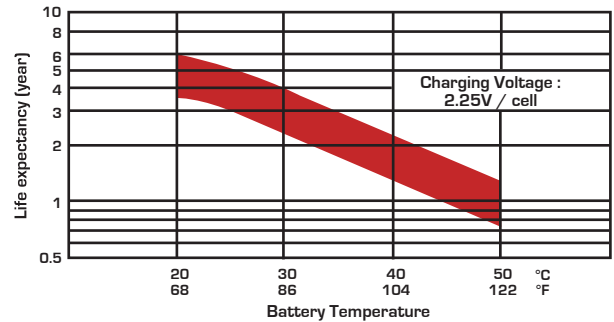
Float Charging Characteristics



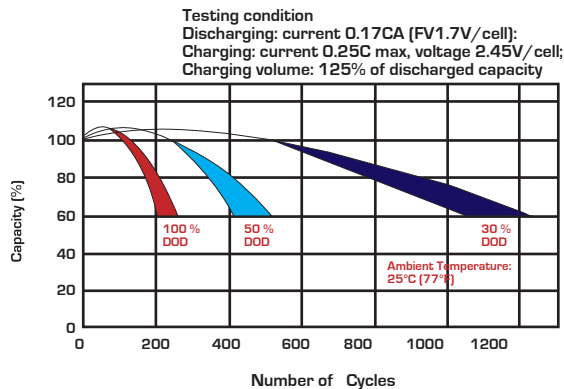
Temperature Effects in Relation to Battery Capacity



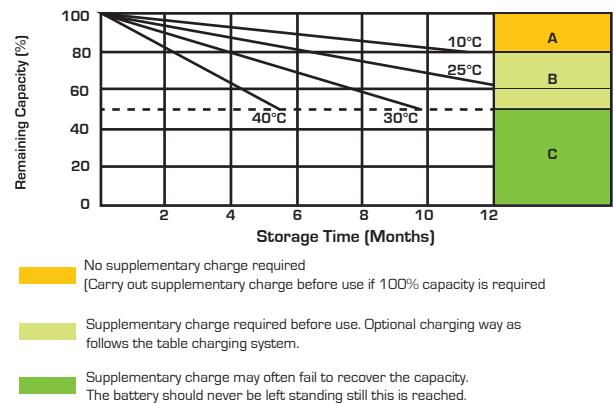
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics



Charging System

| DOD | Current Limit (A) | Constant Voltage (V) | Fully Charged Time (h) |
|-----|---------------------|----------------------|------------------------|
| 20 | 0.15C ₁₀ | 13.5-13.8 vpc (12V) | 10 |
| | 0.20C ₁₀ | 6.75-6.9 vpc (6V) | 8 |
| 50 | 0.15C ₁₀ | 13.5-13.8 vpc (12V) | 15 |
| | 0.20C ₁₀ | 6.75-6.9 vpc (6V) | 12 |
| 80 | 0.15C ₁₀ | 13.5-13.8 vpc (12V) | 16 |
| | 0.20C ₁₀ | 6.75-6.9 vpc (6V) | 14 |
| 100 | 0.15C ₁₀ | 13.5-13.8 vpc (12V) | 20 |
| | 0.20C ₁₀ | 6.75-6.9 vpc (6V) | 18 |

State of Charge (SOC)

| Open Circuit Voltage (V/cell) | Open Circuit Voltage (12V/cell) | Open Circuit Voltage (6V/cell) | State of Charge [% of full charge capacity] |
|-------------------------------|---------------------------------|--------------------------------|---|
| 2.14-2.15 | 12.84-12.90 | 6.42-6.46 | 100 |
| 2.12-2.13 | 12.72-12.78 | 6.36-6.39 | 90 |
| 2.11 | 12.66 | 6.33 | 80 |
| 2.09 | 12.54 | 6.27 | 70 |
| 2.07 | 12.42 | 6.21 | 60 |
| 2.05 | 12.30 | 6.15 | 50 |

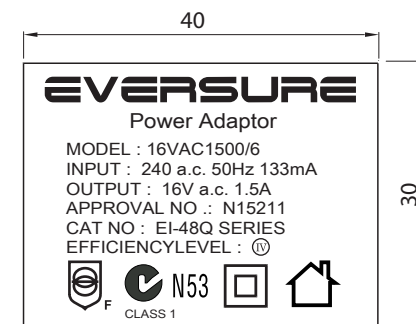


Sealed Performance Batteries


Domestic Sales | Ph: +61 (0)7 3386 1102 | Fax: +61 (0)7 3102 9913
 sales@spb.net.au | www.sealedperformance.com.au
 National Warehouse | 1 Ant Road | Yatala, Brisbane QLD 4207
 Melbourne Office | 2/9 Compark Circuit | Mulgrave, Melbourne VIC 3170

[illegible]

1. OUTPUT CORD:20AWGX3C 1.83M Lead Free GREY (RAL7035)
2.CASE: GREY (RAL7035)
3. SECURITY SCREW IS AN ESSENTIAL REQUIREMENT,
BOTH "⊥" AND "⋒" SHAPE ARE ACCEPTABLE

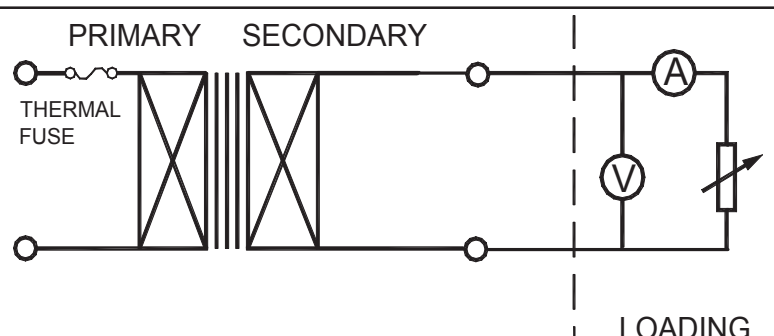



LABEL ARTWORK
 Black word on Silver base label

| | | | | | | | | | |
|---|-----|-------|----------|----------|-------------------|---|--------------------|--------------|--|
| TE DRAWING NO: TE40-0001 R5 | | | | | | PART NO: 16VAC1500MPS/6 | | | |
| DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS | | | | | | | | | |
| SIZE | A4 | DATE | 30/04/09 | CHECKED | KEVIN 30/04/09 |  | ORDER REF: 0420 | SHEET 1 OF 3 | TOLERANCES UNLESS OTHERWISE STATED X.= +/-1 .X= +/-0.5 .XX= +/-0.2 |
| UNIT | MM | DRAWN | KEVIN | APPROVED | FRANK 30/04/09 | CUSTOMER: TE | | | |
| SCALE | NTS | MANU: | | | | DATE: | | | |



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REPRODUCED OR USED IN ANY MANNER WITHOUT THE PRIOR
WRITTEN CONSENT OF TELEPHONE EQUIPMENT (NSW) Pty Ltd

| ITEM | | SPECIFICATION |
|---|-----------|---|
| 1. Primary rated input voltage | | AC240V 50Hz 133mA |
| 2. Secondary rated output voltage and current | | Unloaded voltage: AC 18 V \pm 5% Loaded Voltage : AC 16 V \pm 5% AT 1500 mA |
| 3. Ripple voltage | | *** mV (RMS) MAX. AT Rated Loading |
| 4. Insulation resistance | | Primary - secondary: DC 500 V 100 M Ω Min |
| 5. Dielectric withstand test | | Primary - secondary: AC 3.64 KV 1 seconds |
| 6. Temperature rise | | At rated loading 90°C max. For input coil (By resistance method) and 55°C max. on case surface (By use of thermometer) |
| 7. EFFICIENCY | | \geq 79% |
| 8. Leadout | Primary | SAA PLUG IN TYPE |
| | Secondary | PVC cable length: 1.8 Meter Colour : GREY (RAL7035) Wire size: AWG#20/3C Plug : STRIPPED AND TINNED |
| 9. Test circuit | |  <p>PRIMARY SECONDARY</p> <p>THERMAL FUSE</p> <p>LOADING</p> |
| 10. Case | | SAA48 colour = GREY (RAL7035) |

| | REVISED | DRAWN | APPROVED |
|---|---|----------------|--------------------|
| ① | AMENDED PACKING QTY AND CARTON SIZE | JACKY 10/08/09 | GARY 10/08/09 |
| ② | ADDED DATE CODE ON CASE AND DIMENSIONS | JACKY 07/12/09 | GARY 07/12/09 |
| ③ | ADDED PASSED LABEL ON CARTON | TODD 22/12/10 | JACKY 22/12/10 |
| ④ | AMENDED AC PINS DIMENSION & ADDED WIRES COLORS | ANLEI 01/11/12 | ANLEI 01/11/12 |
| ⑤ | CHANGED CROSS-SHAPED SCREW TO SHAPE  SCREW ON CASE | MARK 31/08/15 | FREDERICK 31/08/15 |




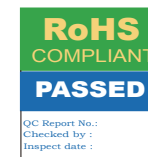
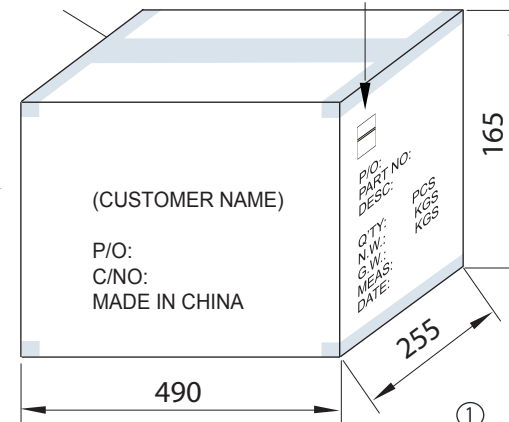
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TE DRAWING NO: TE40-0001 R5

PART NO: 16VAC1500MPS/6


DESCRIPTION: AC ADAPTOR EI-48Q, 16VAC1500mA, 3 WIRE - MEPS

| | | | | | | | | | |
|-------|-----|-------|----------|----------|-------------------|---|--------------------|--------------|--|
| SIZE | A4 | DATE | 30/04/09 | CHECKED | KEVIN 30/04/09 |  | ORDER REF: 0420 | SHEET 2 OF 3 | TOLERANCES UNLESS OTHERWISE STATED X.= +/-1 .X.= +/-0.5 .XX.= +/-0.2 |
| UNIT | MM | DRAWN | KEVIN | APPROVED | FRANK 30/04/09 | CUSTOMER: TE | | | |
| SCALE | NTS | MANU: | | | | DATE: | | | |



ONLY ONE RoHS+PASSED LABEL ON CARTON
RoHS LABEL(55X25MM)
GREEN GROUNDING YELLOW TEXT
PASSED LABEL(55X36MM)
BLUE GROUNDING WHITE TEXT
WHITE GROUNDING BLUE TEXT

| | REVISED | DRAWN | APPROVED |
|---|--|-------------------|-----------------------|
| ① | AMENDED PACKING QTY AND CARTON SIZE | JACKY 10/08/09 | GARY 10/08/09 |
| ② | ADDED DATE CODE ON CASE AND DIMENSIONS | JACKY 07/12/09 | GARY 07/12/09 |
| ③ | ADDED PASSED LABEL ON CARTON | TODD 22/12/10 | JACKY 22/12/10 |
| ④ | AMENDED AC PINS DIMENSION & ADDED WIRES COLORS | ANLEI 01/11/12 | ANLEI 01/11/12 |
| ⑤ | CHANGED CROSS-SHAPED SCREW TO SHAPE 1. SCREW ON CASE | MARK 31/08/15 | FREDERICK 31/08/15 |

| | | | | | | | | | | |
|---|-----|-------|----------|----------|-------------------|---|--------------------|--------------|--|--|
| TE DRAWING NO: TE40-0001 R5 | | | | | | PART NO: 16VAC1500MPS/6 | | | | |
| DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS | | | | | | | | | | |
| SIZE | A4 | DATE | 30/04/09 | CHECKED | KEVIN 30/04/09 |  | ORDER REF: 0420 | SHEET 3 OF 3 | TOLERANCES UNLESS OTHERWISE STATED X.= +/-1 .X=+/-0.5 .XX=+/-0.2 | |
| UNIT | MM | DRAWN | KEVIN | APPROVED | FRANK 30/04/09 | | CUSTOMER: TE | | | |
| SCALE | NTS | MANU: | | | | | DATE: | | | |