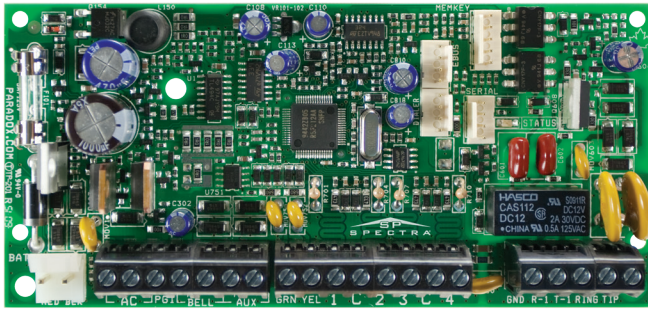


Spectra SP Series

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.

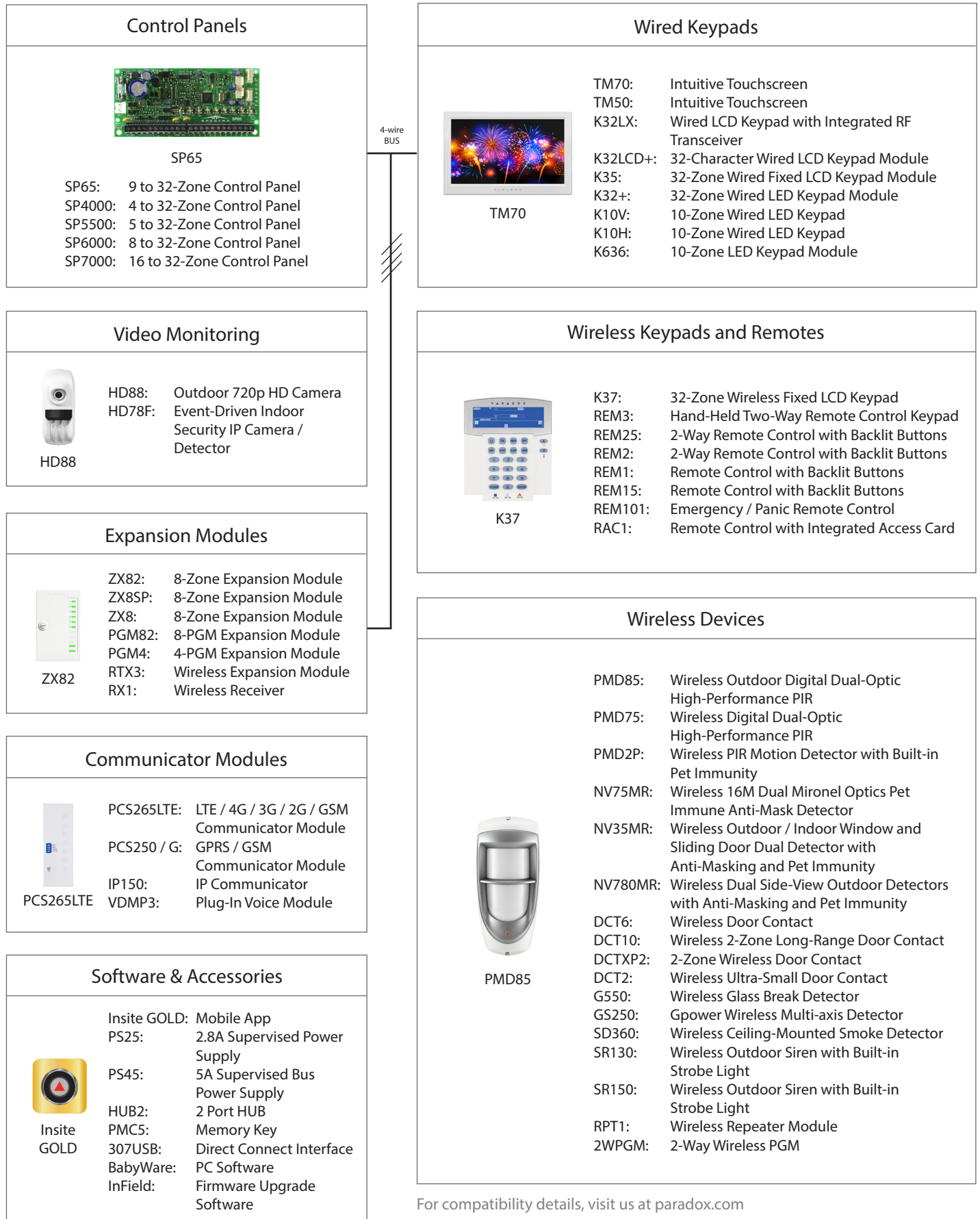
Spectra SP also features multipath communication; this enables your system to communicate through multiple channels, including telephony with its built-in landline dialer, IP with the IP150 Internet Module, IP/GPRS/GSM with the PCS series module, and voice with the VDMP3 Plug-In Voice Module.

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



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



TM70: Intuitive Touchscreen

- ## 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 PRX278000033-P2C

The PRX278000033-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™

525DM: Microwave and Infrared Digital Anti-mask Motion Detector V2.4 P ▲ R ▲ D O X™

Description

The 525DM is a microwave and infrared digital motion detector featuring anti-masking detection. It features both a microwave sensor and a passive infrared sensor, and includes Paradox's powerful signal processing algorithms for triggering an anti-masking alarm when certain conditions occur.



With the anti-masking feature, the 525DM will detect attempts to blind the detector by placing objects in its field of view or spraying it with paint etc., enhancing the level of your site's security.

Installation

There are two mounting methods that can be used for the 525DM; corner mount and flat surface mount. To install the 525DM:

- 1) Select the detector's location. Avoid placing the detector in proximity to the following sources of interference: reflective surfaces, direct air flow, sources of steam/oil vapor, infrared light sources and objects causing temperature changes. Digital microwave detection will be hampered if installed close to vibrating metal surfaces, rotating fans, water flow in plumbing pipes or electromagnetic sources. Also note, microwave frequencies can penetrate walls, therefore, avoid installing the unit where it can respond to motion on the other side of the protected area's walls. Using a Paradox standard lens at the recommended installation height of 2.1m (7ft) ±10%, the 525DM detector will provide full coverage from 1.5m (5ft) to 12m (40ft) without any dead zones (see Figure 1: *Beam Pattern*).
- 2) Remove the front cover screw holding the cover in place; open the cover.
- 3) Loosen the screw holding the PCB in place and gently slide and lift from back cover.
- 4) Drill or punch out the selected knockout holes from the 525DM back cover (as shown in Figure 2: *Installation*) and mount the back cover using the appropriate screws.
- 5) Wire the unit as shown in Figure 3: *PCB Connection*.
- 6) Perform a walk-test to verify detector coverage (see *Walk-testing*).

WARNING: Do not touch the sensor surface as this could result in a detector malfunction. If necessary, clean the sensor surface using a soft cloth with pure alcohol.

Features

- Digital microwave/infrared detection
- Anti-mask feature allows for the detection of close proximity movements (less than 0.75m / 2.5ft) within the detector range
- Adjustable microwave range
- Two auto pulse settings; one for typical environment (normal), and one for high false alarm rejection (high)
- Installer Test Mode: test microwave and infrared detection individually
- 12m (40ft) X 12m (40ft); 90° viewing angle

Figure 1: Beam Pattern

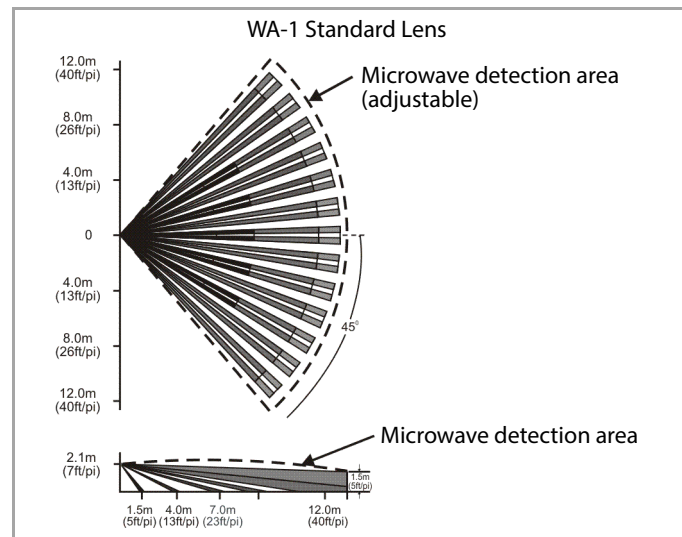


Figure 2: Installation

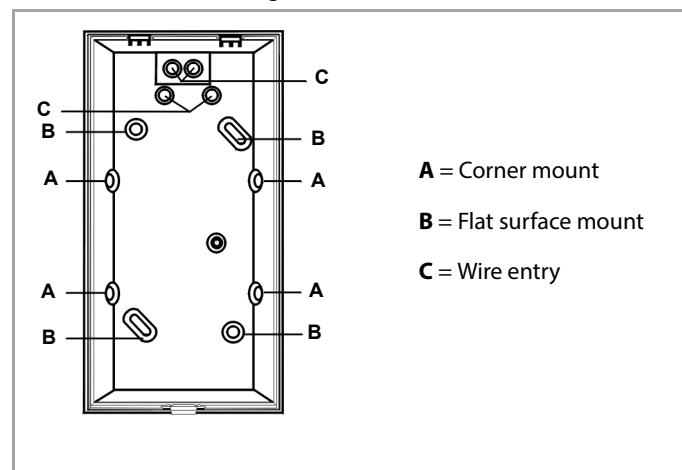
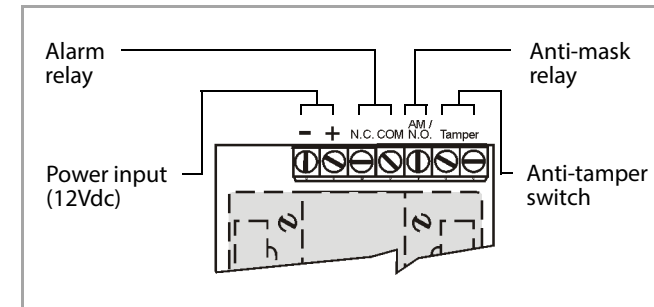


Figure 3: PCB Connection



Turning on the 525DM

Turning on the detector initiates a self-testing program for the signal processor and memory. The LEDs will flash for 16 seconds. When the LEDs are no longer flashing, the detector is ready and fully operational.

Walk-testing

At 20°C (68°F), at the highest sensitivity level, with APSP set to *normal*, and in dual-edge processing mode, you should be detected crossing at least one complete zone (consisting of 2 beams, left and right sensor detecting elements) in the coverage area with any kind of movement; slow/normal walking or running.

With APSP set to *high*, the amount of movement required to generate an alarm is doubled, and you should be detected within crossing 2 complete zones. The approximate width of a full beam at 12m (40ft) from the detector is 1.8m (6ft). To walk-test, move across the detection path, not toward the detector.

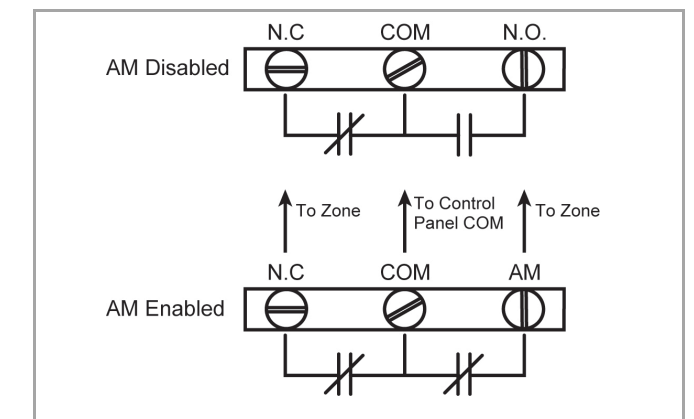
Anti-mask Detection Details

Anti-masking is active only if a valid movement detection occurred during the 10 minutes prior to the anti-mask detection. When a moving object gets near the detector, the blue LED starts flashing for 90 seconds (AM relay not activated yet). If an alarm occurs during that period, the LED stops flashing and no anti-mask trouble occurs. If no alarm occurs within that 90 seconds, anti-mask trouble occurs – AM relay is activated and the LED turns steady blue ON. The anti-mask trouble is cleared by an alarm event.

Relay Operation Details

When anti-masking is enabled, both the alarm and anti-mask relay are independent. When anti-masking is disabled, both relays are activated by an alarm, where the anti-mask relay functions as N.O., and the alarm relay functions as N.C. In *Installer Test Mode* (see reverse page), the alarm relay is continuously activated, and the anti-mask relay is activated upon an alarm. For connection details, see Figure 4: *AM Relay Output Connection*.

Figure 4: AM Relay Output Connection



LED Indicator (Normal Operation)

| LED State | Description |
|-------------------------|------------------------------|
| Red - 4 seconds | Alarm (movement detection) |
| Blue - Flashing 90 sec. | Anti-mask detection pending* |
| Blue - ON | Anti-mask detection* |
| Green - 0.5 seconds | Microwave detection |
| Yellow - 0.5 seconds | Infrared detection |

*See Anti-mask Detection Details for more information.

LED Indicator (Installer Test Mode)

| LED State | Description |
|--------------------|---------------------|
| Yellow - 4 seconds | Infrared detection |
| Green - 4 seconds | Microwave detection |



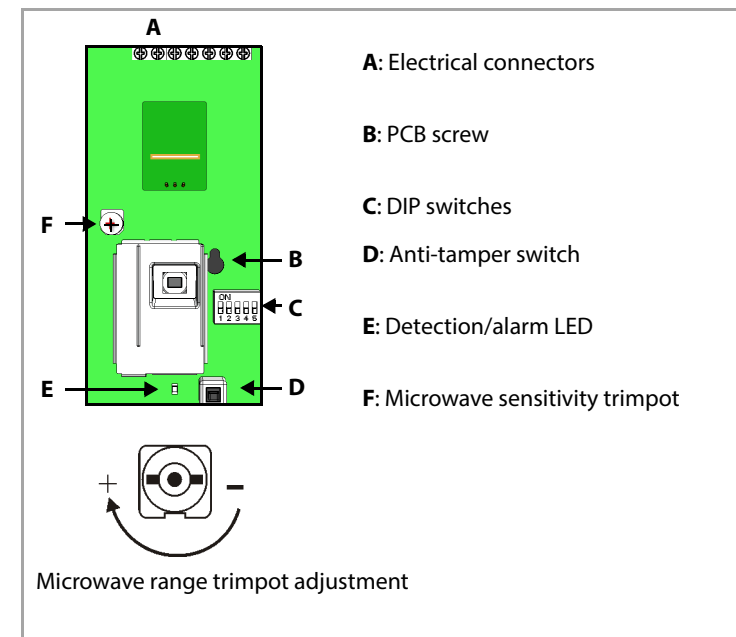
Detector Settings

The following detector settings can be modified using the unit's DIP switches (see Figure 5: Overview). Any changes that are made to DIP switch settings are ignored during a movement alarm or an anti-mask detection. To ensure that new DIP switch settings have been registered, ensure that the unit is not in anti-mask alarm, then move out of the unit's detection path and wait for the LED to turn OFF.

| Step | DIP / Trimpot | Details |
|---|------------------------|--|
| 1 Operational Mode | | The 525DM uses both infrared and microwave detection. Setting DIP switch 1 to OFF will allow you to test each detection method individually. This feature is used in conjunction with DIP switch 3 Installer Test Mode |
| | DIP Switch 1 | DIP switch 1 OFF = installer test mode (see step 3) DIP switch 1 ON = operational mode Δ |
| 2 LED Settings | | If DIP switch 2 is turned ON, the LED will indicate detections as per the <i>LED Indicator</i> table. |
| | DIP Switch 2 | DIP switch 2 OFF = LED disabled DIP switch 2 ON = LED enabled Δ |
| 3 Anti-Mask | | When DIP switch 3 is turned ON, the anti-mask feature will detect close proximity movements (less than 0.75m / 2.5ft) within the detector range. NOTE: For the anti-mask feature to be enabled, DIP switch 1 must be ON. |
| | DIP Switch 3 | DIP switch 3 OFF = anti-mask disabled DIP switch 3 ON = anti-mask enabled Δ |
| Installer Test Mode | DIP Switch 3 | DIP switch 3 OFF = test infrared only DIP switch 3 ON = test microwave only For test mode LED feedback, see LED Indicator (Installer Test Mode) . NOTE: In installer test mode, relay functions and anti-mask are deactivated or altered. |
| | (with DIP1 OFF) | |
| 4 Edge Processing Mode | | Preferably, dual edge processing should be used at all times. Dual edge processing requires balanced detection from both sensor's elements and requires that a beam must be fully crossed even at close range. This setting provides better false alarm rejection. Single edge setting allows for faster detection of close range movements. Use this setting only in normal environments with minimal sources of interference. Never use single edge setting if the detector is placed near sources of interference that could adversely affect it. |
| | DIP Switch 4 | DIP switch 4 OFF = single edge DIP switch 4 ON = dual edge Δ |
| 5 Auto Pulse Signal Processing Level | | APSP measures the energy from each detected signal and stores it in memory. To generate an alarm, the memory must reach a required minimum level. APSP can be set to <i>normal level</i> or <i>high level</i> . When APSP is set to <i>normal level</i> , the unit is calibrated to detect the energy level which is typical to crossing one full single beam at the maximum detection distance. When APSP is set to <i>high level</i> , the unit is calibrated to detect the energy level which is typical to crossing two full beams at the maximum detection distance. Set APSP to <i>high level</i> when the detector is installed in high-risk environments (potential interference) and to provide greatly increased false alarm immunity. |
| | DIP Switch 5 | DIP switch 5 OFF = APSP - normal level Δ DIP switch 5 ON = APSP - high level |
| 8 Microwave Range Trimpot | | Microwaves generated by the unit can pass through walls and have the potential to interfere with the performance of other 525DM units. The range of the microwaves emitted by the detector can be adjusted using the trimpot (see Figure 5: Figure 5: Overview). Microwave trimpot adjustment can be verified using <i>microwave only</i> test mode. |
| | Trimpot | Turn clockwise = increase microwave range Turn counterclockwise = decrease microwave range WARNING: The trimpot is fragile. Do not over-torque. |

Δ = default settings

Figure 5: Overview



Technical Specifications

| | |
|---------------------------|--|
| Motion detector type | PIR + Microwave |
| PIR sensor element type | Dual elements |
| PIR sensor geometry | Rectangular |
| Range (90° standard lens) | 12m x 12m (40ft x 40ft) |
| Microwave antenna type | Flat strip microwave antenna with FET oscillator |
| Frequency | FCC & DOC - 10.525GHZ (other frequencies available) |
| Operating temperature | -20° to +50°C (-4° to +122°F) |
| Voltage | 10 - 16Vdc |
| Current consumption | 30mA (approximately) |
| Alarm form A output | Standard 100mA, 28Vdc |
| Alarm solid-state output | N.C. 150mA, 28Vdc |
| Tamper form C output | N.C. 150mA |
| Alarm period | 4 seconds |
| Detection speed | 0.2m to 3.5m/s (0.6ft to 11.5ft/s) |

Warranty

© 2020 Paradox Ltd. All rights reserved. Specifications may change without prior notice. One or more of the following US patents may apply: 7046142, 6215399, 6111256, 6104319, 5920259, 5886632, and RE39406 and other pending patents may apply. Canadian and international patents may also apply. LODIFF® lens: patent #4,787,722 (U.S.). Digital Vision is a trademark or registered trademark of Paradox Ltd. or its affiliates in Canada, the United States and/or other countries. LODIFF® is a registered trademark of Fresnel Technologies Inc. For the latest information on products approvals, such as UL and CE, please visit www.paradox.com.

Warranty: For complete warranty information on this product please refer to the Limited Warranty Statement found on the website www.paradox.com/terms. Your use of the Paradox product signifies your acceptance of all warranty terms and conditions.



Specifications DFMWP16

The DFMWP16 is combo siren and strobe (slim design).

- New design
- Siren tone selectable for different applications
- Sound volume adjustable: low dB for testing and high dB for normal operation
- Bright: new LED strobe design
- Independent siren and strobe operation
- High quality UV treated case
- Weatherproof
- Front and back tampers
- EOLRs built in, suitable for most major alarm panels

Operating voltage: 9-15VDC

SPL @ 1meter: 110dB

Siren current draw: 150mA

Strobe current draw: 50mA

Siren tone selectable: Tone 1: warble; Tone 2: Hi/Lo

Dimension: 200 x 110 x 40mm





WP16 Combo Siren/Strobe

Voltage: 9-15VDC

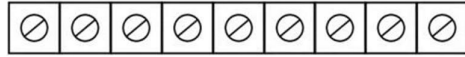
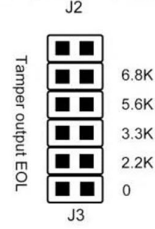
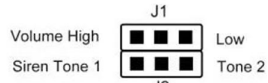
Current: Max 150mA @ 12VDC

High Volume: 110±3 dB @ 1meter

Low Volume: 95±3 dB @ 1meter

Tone 1: Warble

Tone 2: Hi/Lo



+ Siren - Input + Strobe - Input + LED - Night Comfort Tamper Output Spare





Specifications DFMWP08

The DFMWP08 is indoor top hat piezo.

Input voltage: 12VDC

SPL @ 1meter: 105dB

Current draw: 90mA





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. | |



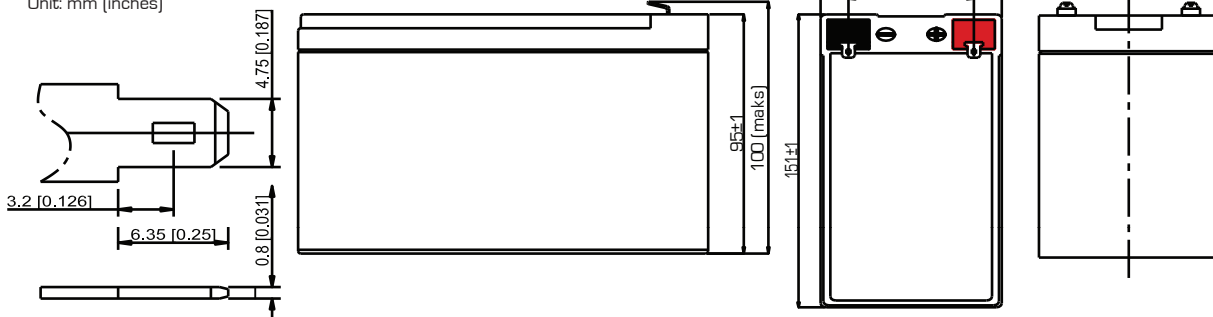
Applications

- 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)



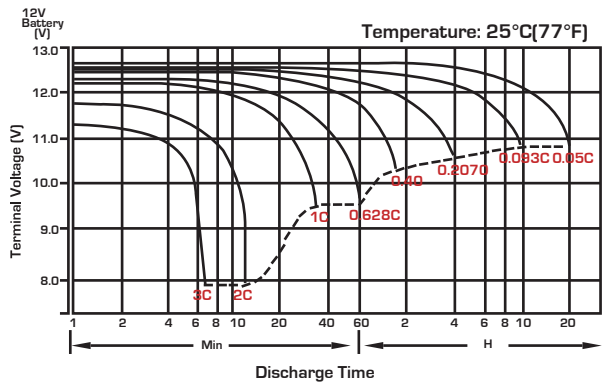
Constant Current Discharge (Amperes) at 25°C (77°F)

| 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 |

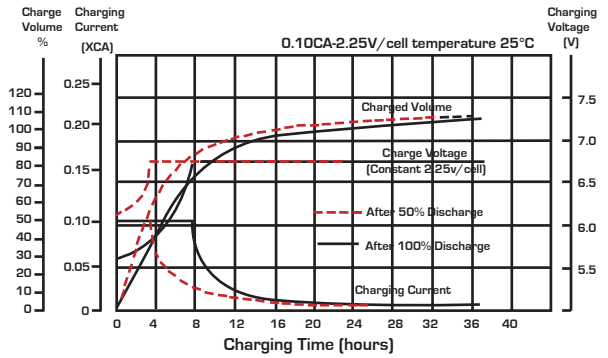
Constant Power Discharge (Watts/Cell) at 25°C (77°F)

| 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 |

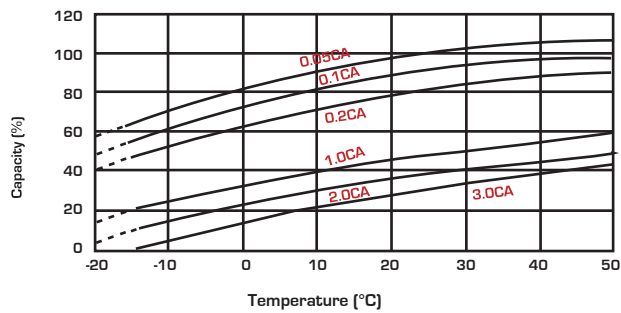
Discharge Characteristics



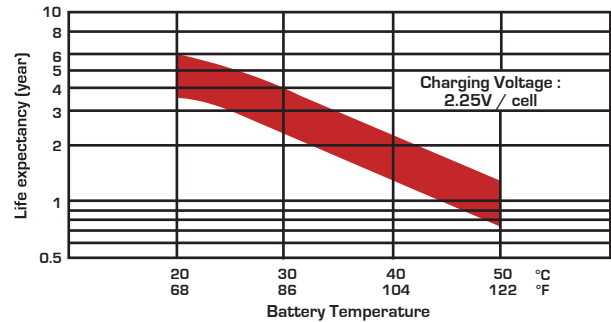
Float Charging Characteristics



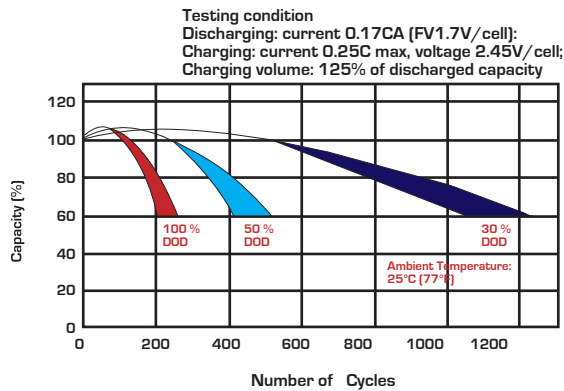
Temperature Effects in Relation to Battery Capacity



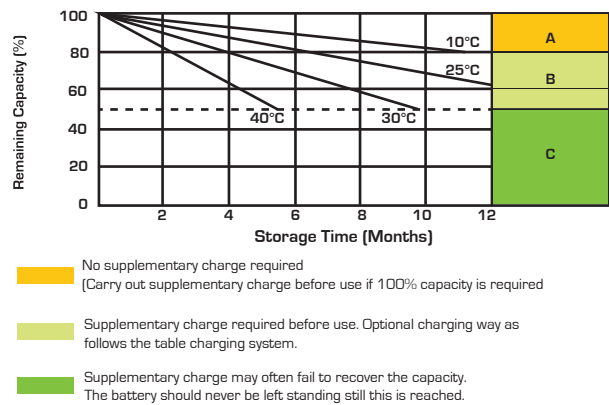
Effect of Temperature on Long Term Float Life



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 |



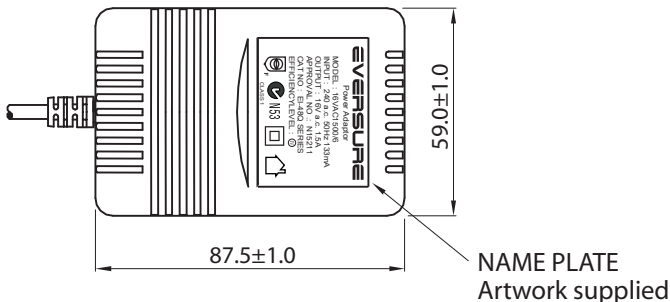
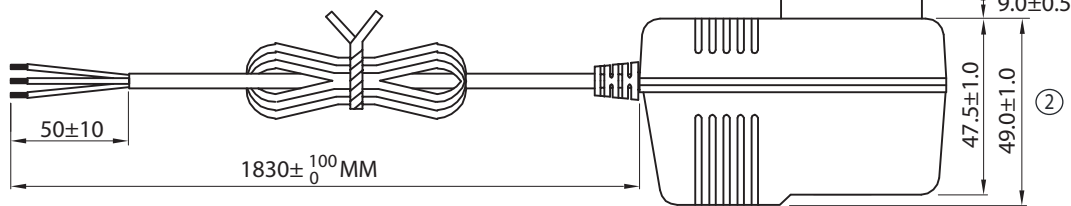
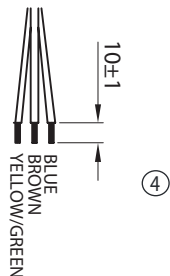
Sealed Performance Batteries

Domestic Sales | Ph: +61 (0)7 3386 1102 | Fax: +61 (0)7 3102 9913

sales@spb.net.au | www.sealedperformance.com.au

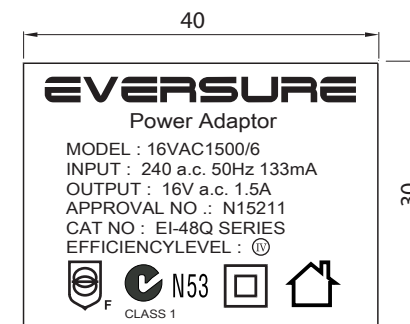
National Warehouse | 1 Ant Road | Yatala, Brisbane QLD 4207

Melbourne Office | 2/9 Compark Circuit | Mulgrave, Melbourne VIC 3170



| | 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 |

- NOTES:
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.= +/- .X.= +/-0.5 .XX.= +/-0.2 |
| UNIT | MM | DRAWN | KEVIN | APPROVED | FRANK 30/04/09 | | CUSTOMER: | TE | | |
| SCALE | NTS | MANU: | | | | DATE: | | | | |



THIS DRAWING AND SPECIFICATIONS ARE THE PROPERTY OF TELEPHONE EQUIPMENT (NSW) Pty Ltd AND SHALL NOT BE 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 ± 5% Loaded Voltage : AC 16 V ± 5% AT 1500 mA | |
| 3. Ripple voltage | *** mV (RMS) MAX. AT Rated Loading | |
| 4. Insulation resistance | Primary - secondary: DC 500 V 100 MΩ 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 | ≥ 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 | | |
| 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 |

TE DRAWING NO: TE40-0001 R5


PART NO: 16VAC1500MPS/6

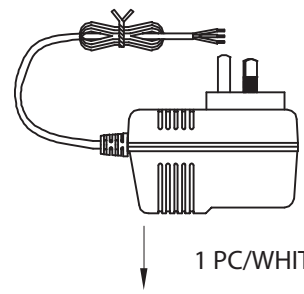
DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS



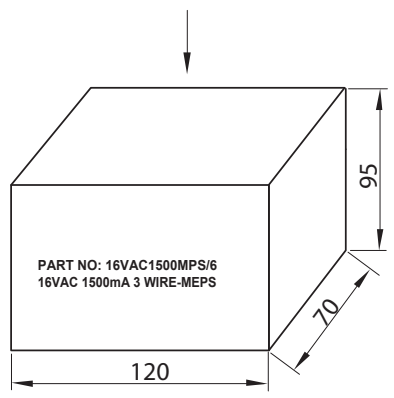
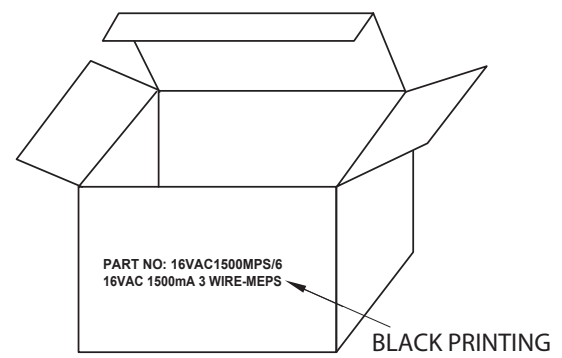
THIS DRAWING AND SPECIFICATIONS ARE THE PROPERTY OF TELEPHONE EQUIPMENT (NSW) Pty Ltd AND SHALL NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF TELEPHONE EQUIPMENT (NSW) Pty Ltd

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

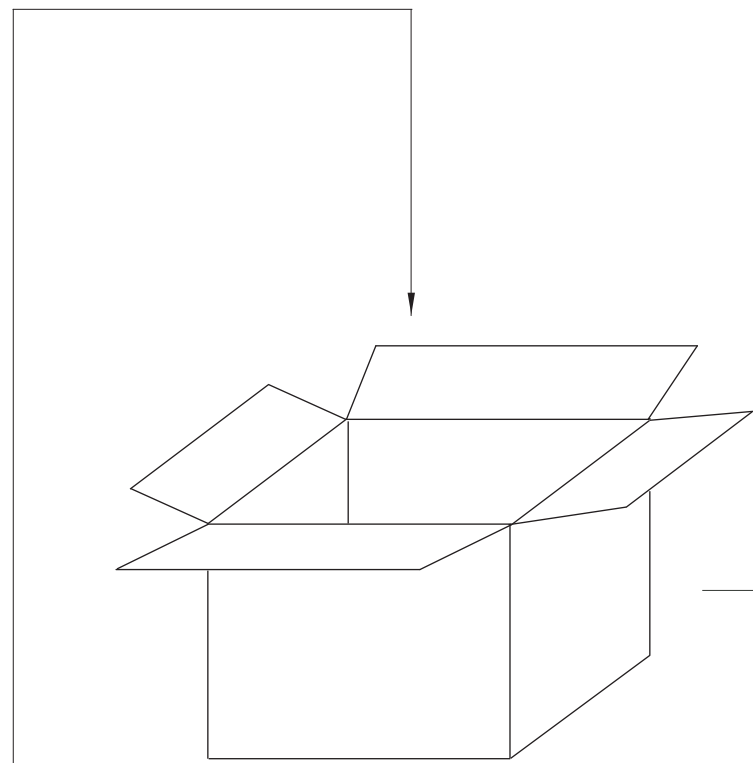
| | REVISED | DRAWN | APPROVED |
|---|--|-------------------|-----------------------|
| ① | AMENDED PACKING QTY AND CARTON SIZE | JACKY 10/08/09 | GARY 10/08/09 |
| ② | ADDED DATE CODE ON CASE AND DIMENSIONS | JACKY 07/12/09 | GARY 07/12/09 |
| ③ | ADDED PASSED LABEL ON CARTON | TODD 22/12/10 | JACKY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



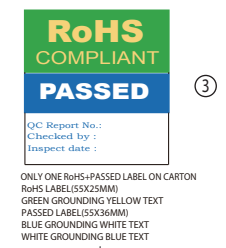
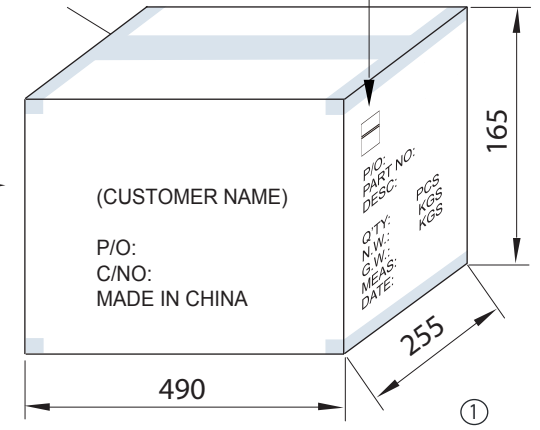
1 PC/WHITE BOX



20 BOXES/CARTON ①



ADHESIVE TAPE




TE DRAWING NO: TE40-0001 R5 PART NO: 16VAC1500MPS/6

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



THIS DRAWING AND SPECIFICATIONS ARE THE PROPERTY OF TELEPHONE EQUIPMENT (NSW) Pty Ltd AND SHALL NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF TELEPHONE EQUIPMENT (NSW) Pty Ltd

| | | | | | | | | | | |
|-------|-----|-------|----------|----------|-------------------|---|------------|------|--------------|---|
| 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: | | | |