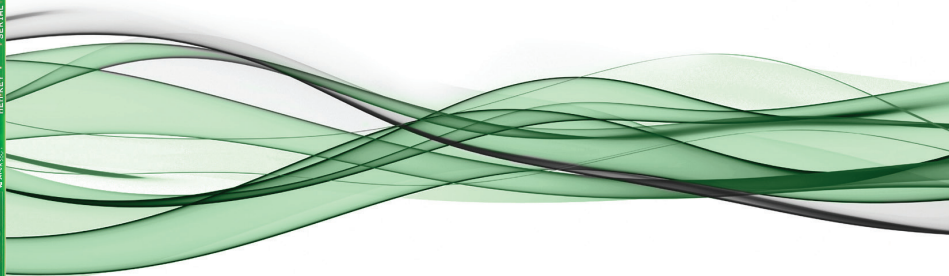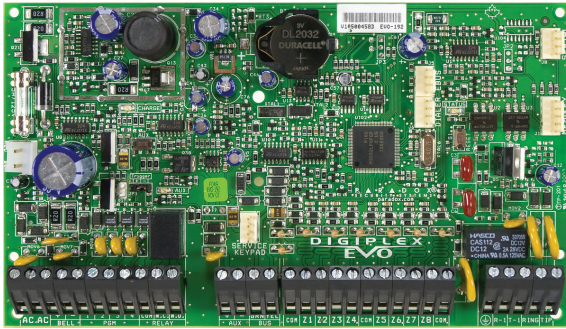# PARADOX™

Digiplex EVO
High Security and Access System

Description

Digiplex EVO systems (EVO192) provide the highest level of protection for banks, government sites, luxurious residential homes and any place where maximum security is essential. The modular concept of these systems provide installers with labour-saving features that make expanding, installing and servicing these systems quick and convenient.

Expand your system by adding expansion modules anywhere, in any combination, on the 4-wire combus. Modules are connected to the combus at the most convenient location and their zone inputs are assigned to the desired zone and partition. Keyswitches, remote controls, and unused module inputs do not use zones. Once installed, all combus modules (including motion detectors) can be programmed remotely via a keypad, or the BabyWare PC software.

Digiplex EVO integrates access control solutions. Your alarm system user database can be used to manage the access for up to 32 doors, and the monitoring of these doors can be included in any partition. By merging security and access control, Digiplex EVO systems increase the level of protection offered by security systems to a whole new level.
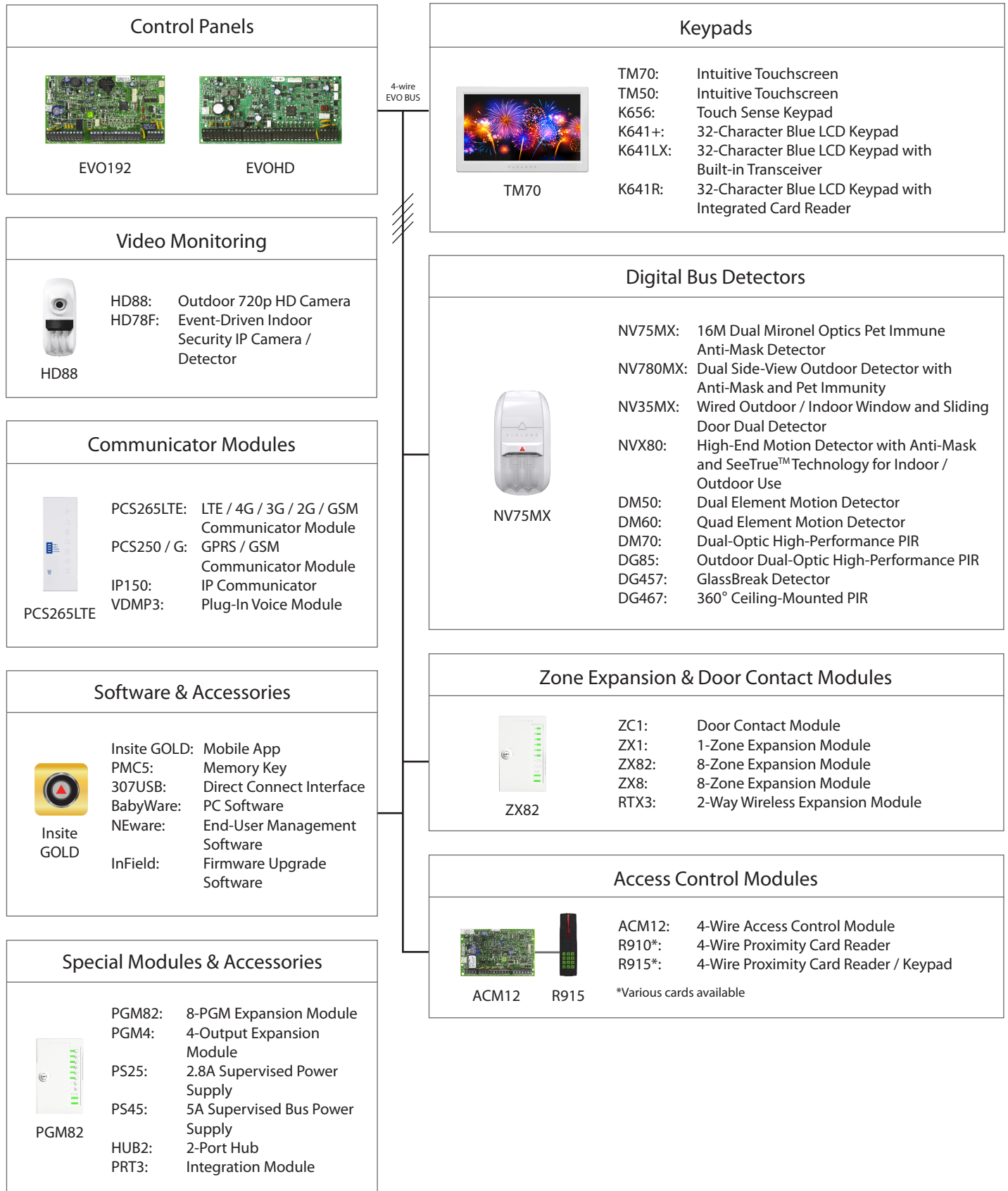
Feature Comparison

Feature	EVO192
Maximum Zones*	192
On-board Zones	8 (16 with ATZ)
Partitions	8
User Codes	999
Multibus	✓
Stay Arming	✓
Panel In-field Firmware Upgradable	✓
Access Control (Doors)	32
Access Levels / Schedules	16 / 32
Events Buffered	3584
PGMs	32 (5 on-board)
PGM +/- Trigger	✓
Virtual Zones**	32
Expansion Modules*	254
Supports IP / GPRS / GSM Communication (PCS Series)	✓
Supports VDMP3 Plug-in Voice Module	✓
Supports IP150 Internet Module	✓
Software	NEware, BabyWare
Listen-in Capabilities	✓

* Can be any combination of hardwire, wireless or addressable zones, or modules
** Automate PGM activations without occupying security zones

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paradox.com

System Overview

Control Panels

EVO192

EVOHD

4-wire
EVO BUS

Video Monitoring

HD88

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

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
PMC5:   Memory Key
307USB: Direct Connect Interface
BabyWare: PC Software
NEware: End-User Management
              Software
InField: Firmware Upgrade
              Software

Special Modules & Accessories

PGM82

PGM82: 8-PGM Expansion Module
PGM4:   4-Output Expansion
        Module
PS25:   2.8A Supervised Power
        Supply
PS45:   5A Supervised Bus Power
        Supply
HUB2:   2-Port Hub
PRT3:   Integration Module

Keypads

TM70

TM70:   Intuitive Touchscreen
TM50:   Intuitive Touchscreen
K656:   Touch Sense Keypad
K641+:   32-Character Blue LCD Keypad
K641LX: 32-Character Blue LCD Keypad with
          Built-in Transceiver
K641R: 32-Character Blue LCD Keypad with
          Integrated Card Reader

Digital Bus Detectors

NV75MX

NV75MX: 16M Dual Mironel Optics Pet Immune
          Anti-Mask Detector
NV780MX: Dual Side-View Outdoor Detector with
          Anti-Mask and Pet Immunity
NV35MX: Wired Outdoor / Indoor Window and Sliding
          Door Dual Detector
NVX80:   High-End Motion Detector with Anti-Mask
          and SeeTrue™ Technology for Indoor /
          Outdoor Use
DM50:   Dual Element Motion Detector
DM60:   Quad Element Motion Detector
DM70:   Dual-Optic High-Performance PIR
DG85:   Outdoor Dual-Optic High-Performance PIR
DG457:   GlassBreak Detector
DG467:   360° Ceiling-Mounted PIR

Zone Expansion & Door Contact Modules

ZX82

ZC1:   Door Contact Module
ZX1:   1-Zone Expansion Module
ZX82:   8-Zone Expansion Module
ZX8:   8-Zone Expansion Module
RTX3:   2-Way Wireless Expansion Module

Access Control Modules

ACM12   R915

ACM12:   4-Wire Access Control Module
R910*:   4-Wire Proximity Card Reader
R915*:   4-Wire Proximity Card Reader / Keypad

*Various cards available

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. You can also view the live status of your system and arm/disarm it. For example, you have just left your office for the weekend but are not sure you remembered to arm 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 Digiplex EVO 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 Digiplex EVO installation.

Voice Communication (VDMP3)

The VDMP3 is a plug-in, voice-assisted module that can be programmed to call up to 5 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; e.g., "Area 1 in alarm. Zone 3. Press 1 to disarm the system..." 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.

In-field Upgradable

Digiplex EVO is not only easy to install, but is also fully in-field upgradable 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 done using Paradox's InField Firmware Upgrade Software.

Access Control

Access control can be added to the Digiplex EVO system to provide additional control over who has access to your premises, even when your security system is not armed and you are not there to supervise. With added access control you can limit access to certain areas, disallow access to others, or control entire groups of people according to their schedule or privileges. Make your premises inadmissible to all except those with access cards, track anybody who enters your premises, print detailed reports of access control activities, and more.

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 its settings. Now you can control your Paradox security system from any Android / iOS smartphone.

TM70 Overview

33°C In | Mon, Mar 26 | 13:37

Arm/Disarm

Areas
1 of 8
Armed

Zones
Ok

Info
None

Menu

13.3Vdc

11.4 cm
4.5 in

17.7 cm
7 in
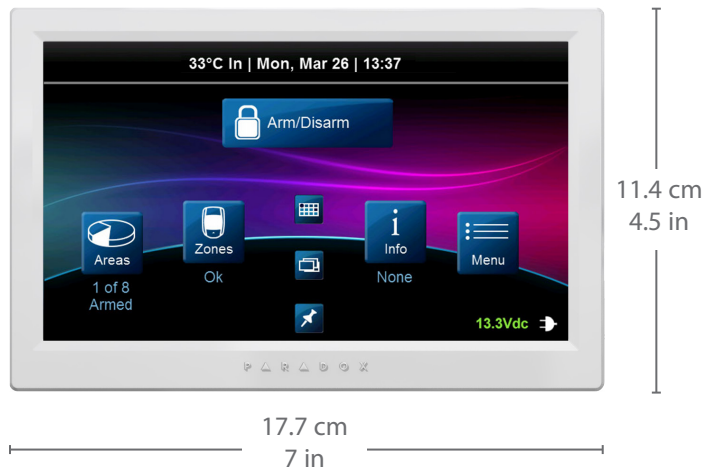
TM70: Intuitive Touchscreen

■ 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 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 A R A 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 protects against tampering (opening door or removal from wall).

DIGIPLEX EVO

EVO48
EVO192

User Guide

System is
Armed

PARADOX

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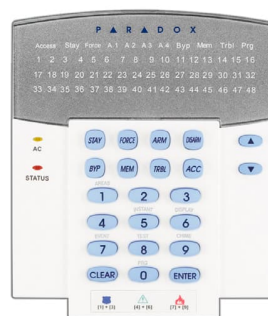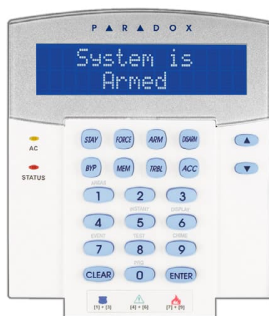
P A R A D O X™

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
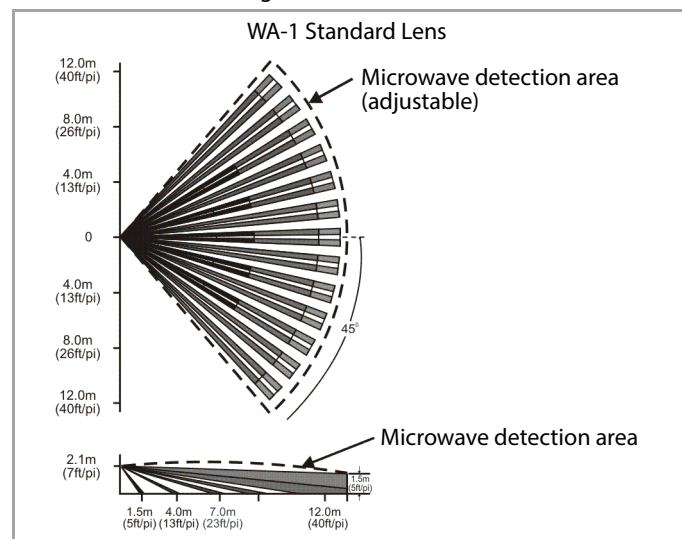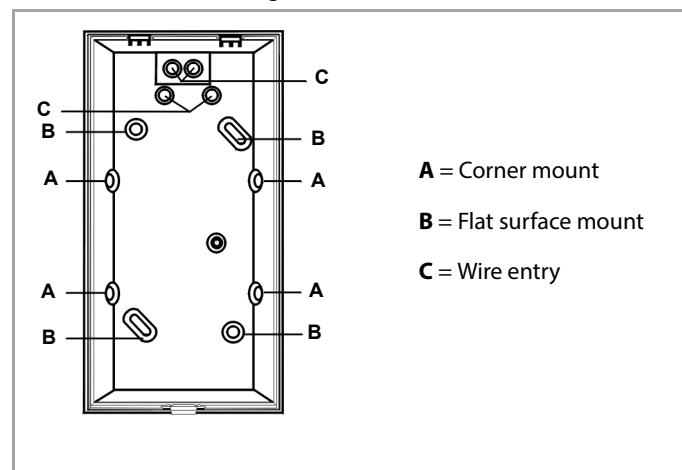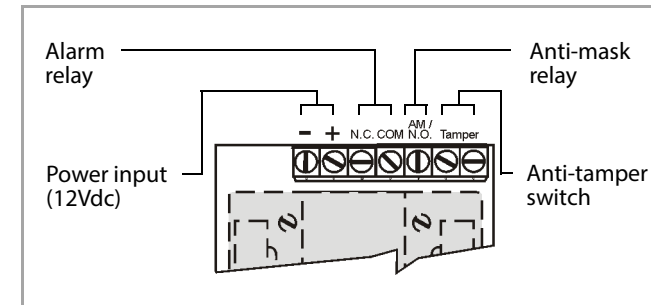- 12m (40ft) X 12m (40ft); 90° viewing angle

Figure 1: Beam Pattern

WA-1 Standard Lens

Microwave detection area (adjustable)

Microwave detection area

Figure 2: Installation

A = Corner mount

B = Flat surface mount

C = Wire entry

Figure 3: PCB Connection

Alarm relay

Anti-mask relay

Power input (12Vdc)

Anti-tamper switch

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.
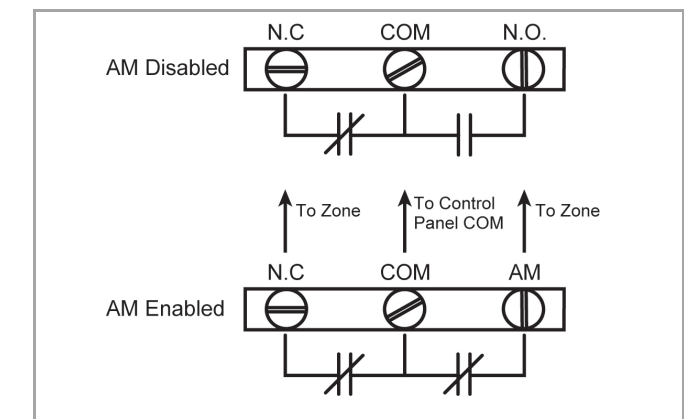
Anti-mask Detection Details

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

AM Disabled

N.C   COM   N.O.

AM Enabled

To Zone   To Control Panel COM   To Zone

N.C   COM   AM

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)

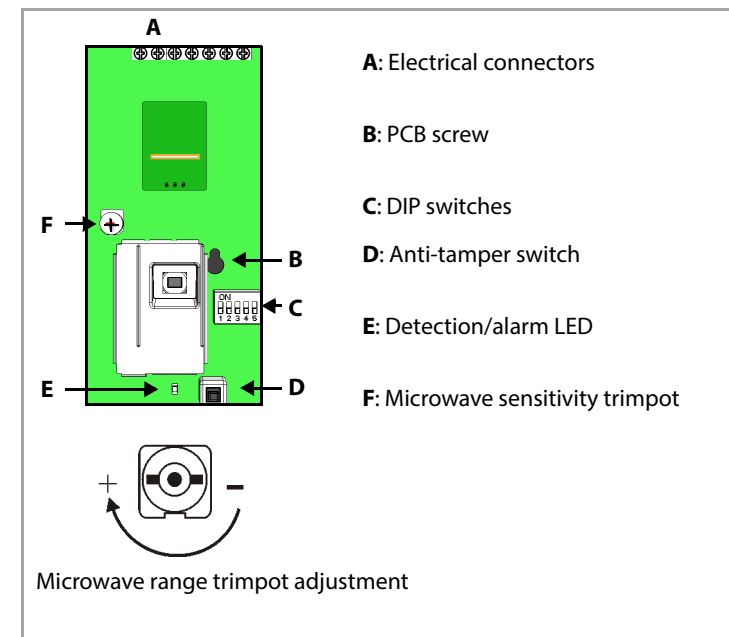| LED State	Description
Yellow - 4 seconds	Infrared detection
Green - 4 seconds	Microwave detection

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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**△
2 LED Settings		If DIP switch 2 is turned ON, the LED will indicate detections as per the *LED Indicator* table.
	DIP Switch 2	DIP switch 2 OFF = LED disabled **DIP switch 2 ON = LED enabled** △
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** △
Installer Test Mode	DIP Switch 3 (with DIP1 OFF)	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.
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** △
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 *normal level* or *high level*. When APSP is set to *normal level*, 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 *high level*, 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 *high level* 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** △ 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 *microwave only* test mode.
	Trimpot	Turn clockwise = increase microwave range Turn counterclockwise = decrease microwave range **WARNING:** The trimpot is fragile. Do not over-torque.

△= default settings

Figure 5: Overview

A: Electrical connectors

B: PCB screw

C: DIP switches

D: Anti-tamper switch

E: Detection/alarm LED

F: Microwave sensitivity trimpot

Microwave range trimpot adjustment

Technical Specifications

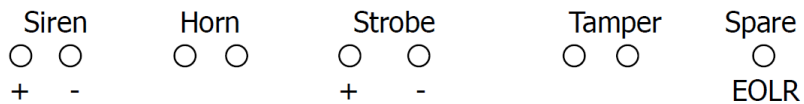| Motion detector type	PIR + Microwave
PIR sensor element type	Dual elements
PIR sensor geometry	Rectangular
Range (90° standard lens)	12m x 12m (40ft x 40ft)
Microwave antenna type	Flat strip microwave antenna with FET oscillator
Frequency	FCC & DOC - 10.525GHZ (other frequencies available)
Operating 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

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, 8Ω/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.

Siren		Horn		Strobe		Tamper		Spare
○	○	○	○	○	○	○	○	○
+	-			+	-			EOLR

ZEAL

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%
Sulfurid Acid	Distilled Sulfurid 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)

4.75 [0.187]
3.2 [0.126]
6.35 [0.25]
0.8 [0.031]
65±1
45±1
95±1
100 (maks)
151±1
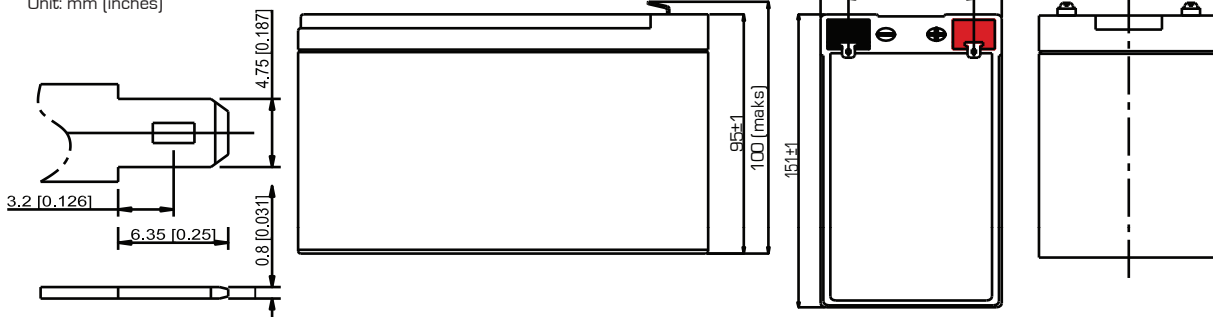
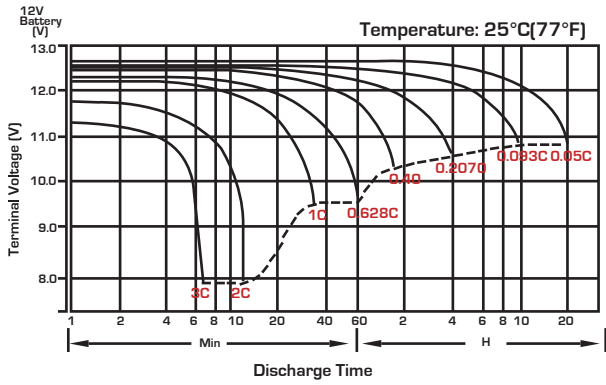### Constant Current Discharge (Amperes) at 25°C (77°F)

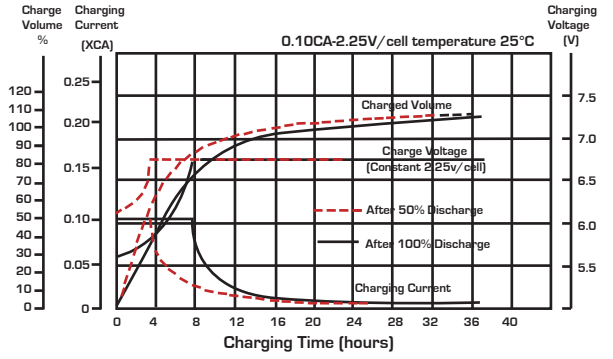| F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	18.0	12.8	10.48	8.79	6.53	4.79	3.86	2.29	1.69	1.36	1.14	0.98	0.774	0.640	0.345
1.80V/cell	21.4	14.3	11.4	9.44	6.94	5.05	4.03	2.38	1.74	1.40	1.17	1.01	0.791	0.653	0.350
1.75V/cell	24.2	15.6	12.2	10.0	7.29	5.27	4.18	2.45	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)

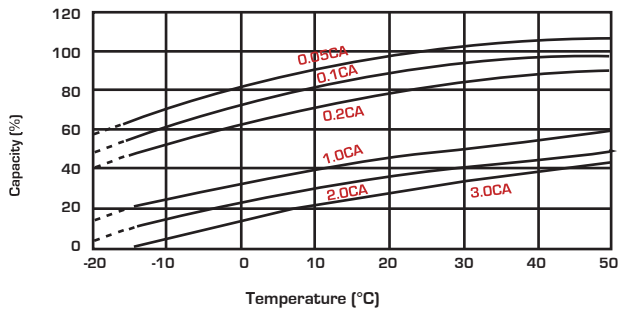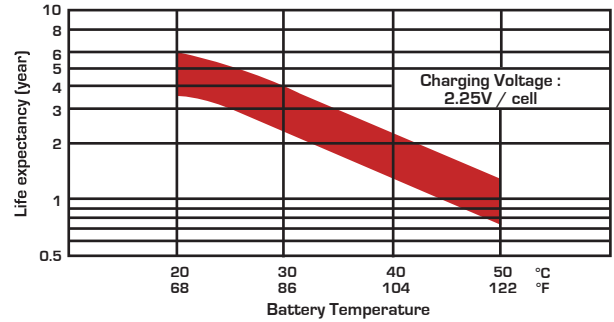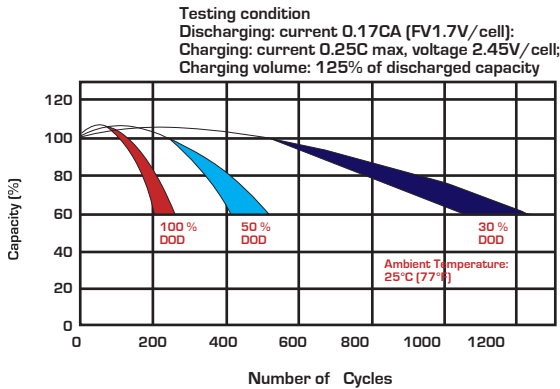| F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	34.2	24.5	20.2	17.1	12.8	9.44	7.64	4.56	3.37	2.72	2.29	1.99	1.565	1.296	0.701
1.80V/cell	40.2	27.2	21.9	18.3	13.5	9.91	7.96	4.72	3.47	2.79	2.34	2.03	1.593	1.318	0.708
1.75V/cell	45.1	29.5	23.3	19.3	14.2	10.3	8.23	4.85	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

Temperature: 25°C(77°F)

12V Battery (V)

Terminal Voltage (V): 13.0, 12.0, 11.0, 10.0, 9.0, 8.0

Curves labeled: 3C, 2C, 1C, 0.628C, 0.40, 0.2070, 0.083C, 0.05C

Discharge Time — Min / H: 1 2 4 6 8 10 20 40 60 / 2 4 6 8 10 20

Float Charging Characteristics

0.10CA-2.25V/cell temperature 25°C

Charge Volume %: 120 110 100 90 80 70 60 50 40 30 20 10

Charging Current (XCA): 0.25 0.20 0.15 0.10 0.05

Charging Voltage (V): 7.5 7.0 6.5 6.0 5.5

Charging Time (hours): 0 4 8 12 16 20 24 28 32 36 40

- Charged Volume
- Charge Voltage (Constant 2.25v/cell)
- After 50% Discharge
- After 100% Discharge
- Charging Current

Temperature Effects in Relation to Battery Capacity

Capacity (%): 0 20 40 60 80 100 120

Curves: 0.05CA, 0.1CA, 0.2CA, 1.0CA, 2.0CA, 3.0CA

Temperature (°C): -20 -10 0 10 20 30 40 50

Effect of Temperature on Long Term Float Life

Life expectancy (year): 0.5 1 2 3 4 5 6 8 10

Charging Voltage: 2.25V / cell

Battery Temperature:
20°C/68°F, 30°C/86°F, 40°C/104°F, 50°C/122°F

Cycle Life in Relation to Depth of Discharge

Testing condition
Discharging: current 0.17CA (FV1.7V/cell):
Charging: current 0.25C max, voltage 2.45V/cell;
Charging volume: 125% of discharged capacity

Capacity (%): 0 20 40 60 80 100 120

100 % DOD, 50 % DOD, 30 % DOD

Ambient Temperature: 25°C (77°F)

Number of Cycles: 0 200 400 600 800 1000 1200

Self Discharge Characteristics

Remaining Capacity (%): 0 20 40 60 80 100

10°C, 25°C, 40°C, 30°C

Storage Time (Months): 2 4 6 8 10 12

A, B, C

- No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required
- Supplementary charge required before use. Optional charging way as follows the table charging system.
- Supplementary charge may often fail to recover the capacity. The battery should never be left standing still this is reached.

Charging System

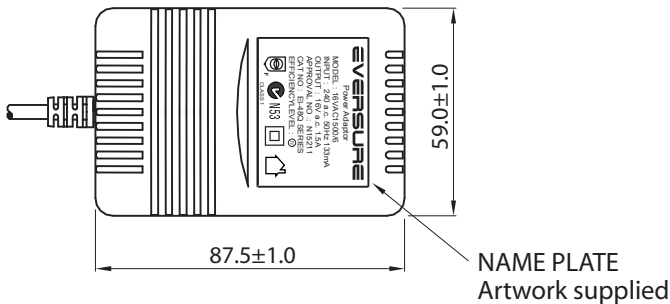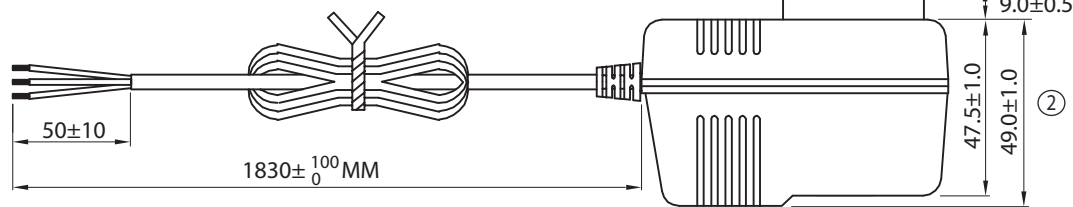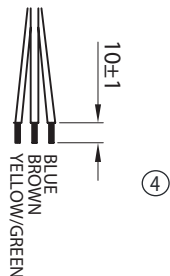| DOD	Currency Limit (A)	Constant Voltage (V)	Fully Charged Time (h)
20	0.15C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	10
20	0.20C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	8
50	0.15C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	15
50	0.20C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	12
80	0.15C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	16
80	0.20C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	14
100	0.15C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	20
100	0.20C₁₀	13.5-13.8 vpc (12V) 6.75-6.9 vpc (6V)	18

State of Charge (SOC)

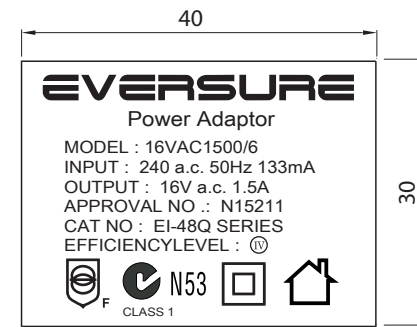| Open Circuit Voltage (V/cell)	Open Circuit Voltage (12V/cell)	Open Circuit Voltage (6V/cell)	State of Charge (% of full charge capacity)
2.14-2.15	12.84-12.90	6.42-6.46	100
2.12-2.13	12.72-12.78	6.36-6.39	90
2.11	12.66	6.33	80
2.09	12.54	6.27	70
2.07	12.42	6.21	60
2.05	12.30	6.15	50

	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

10±1

BLUE
BROWN
YELLOW/GREEN

④

DATE CODE
XX(year)YY(week)

②

13.7±0.5

21.3±1.0

④

17.0±1.0

9.0±0.5

47.5±1.0

49.0±1.0

②

50±10

1830± ⁺¹⁰⁰₀ MM

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

40

EVERSURE
Power Adaptor

MODEL : 16VAC1500/6
INPUT : 240 a.c. 50Hz 133mA
OUTPUT : 16V a.c. 1.5A
APPROVAL NO .: N15211
CAT NO : EI-48Q SERIES
EFFICIENCYLEVEL : Ⅳ

F   CLASS 1   N53   CLASS 1

30

LABEL ARTWORK
Black word on Silver base label

59.0±1.0

87.5±1.0

NAME PLATE
Artwork supplied

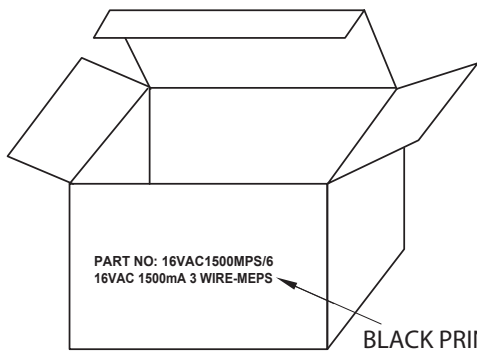| TE DRAWING NO: TE40-0001 R5					PART NO: 16VAC1500MPS/6			
DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS								
SIZE	A4	DATE	30/04/09	CHECKED	KEVIN 30/04/09	KG ⊕	ORDER REF: 0420	SHEET 1 OF 3	TOLERANCES UNLESS OTHERWISE STATED
UNIT	MM	DRAWN	KEVIN	APPROVED	FRANK 30/04/09	CUSTOMER: TE			X.=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

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		Unloaded voltage: AC **18** V ± 5%
voltage and current		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℃ max. For input coil (By resistance method) and 55℃ 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)**

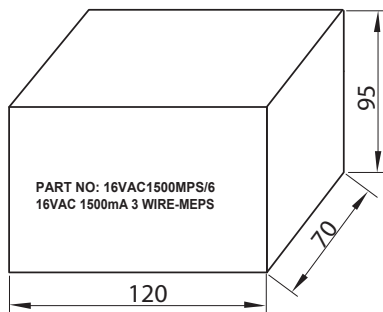| TE DRAWING NO: TE40-0001 R5						PART NO: 16VAC1500MPS/6		
DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS								
SIZE	A4	DATE	30/04/09	CHECKED	KEVIN 30/04/09	ORDER REF: 0420	SHEET 2 OF 3	TOLERANCES UNLESS OTHERWISE STATED
UNIT	MM	DRAWN	KEVIN	APPROVED	FRANK 30/04/09	CUSTOMER: TE		X.= +/-1 .X=+/-0.5
SCALE	NTS	MANU:				DATE:		.XX=+/-0.2

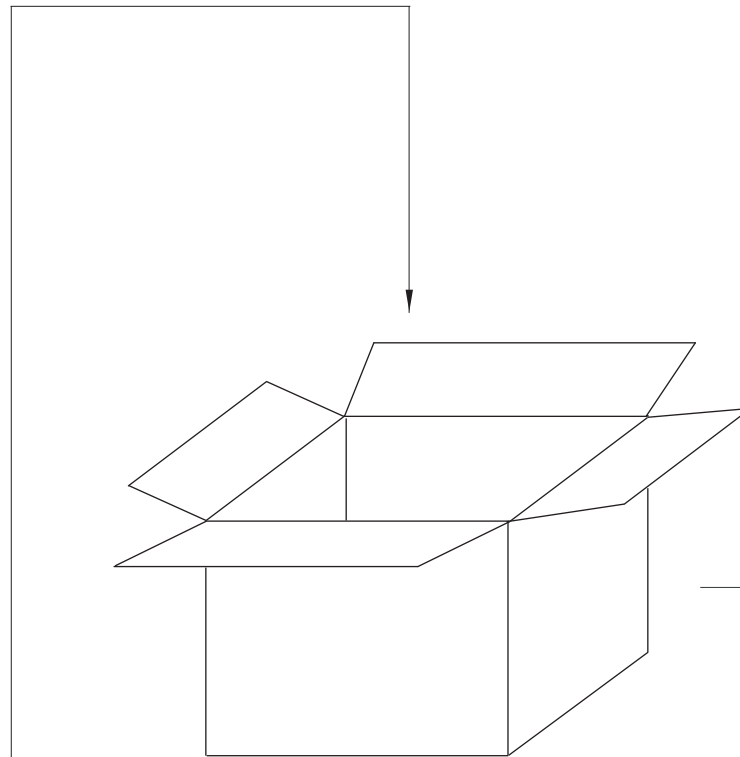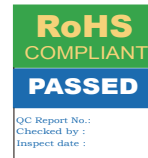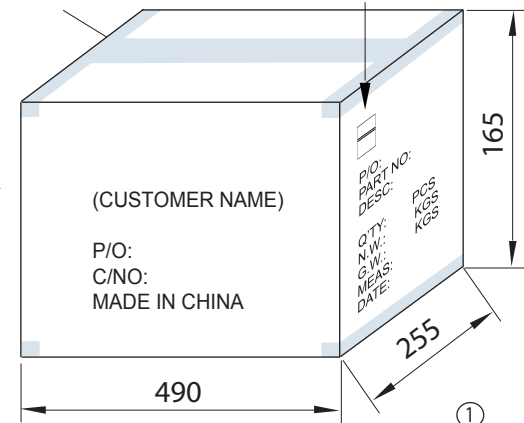| REVISED		DRAWN	APPROVED
①	AMENDED PACKING QTY AND CARTON SIZE	JACKY 10/08/09	GARY 10/08/09
②	ADDED DATE CODE ON CASE AND DIMENSIONS	JACKY 07/12/09	GARY 07/12/09
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⑤	CHANGED CROSS-SHAPPED SCREW TO SHAPE ⊥ SCREW ON CASE	MARK 31/08/15	FREDERICK 31/08/15

1 PC/WHITE BOX

PART NO: 16VAC1500MPS/6
16VAC 1500mA 3 WIRE-MEPS

BLACK PRINTING

PART NO: 16VAC1500MPS/6
16VAC 1500mA 3 WIRE-MEPS

95

70

120

20 BOXES/CARTON ①

ADHESIVE TAPE

SHIPPING CARTON
PLEASE FOLLOW ORDER TO PRINT SHIPPING MARKS.

RoHS COMPLIANT
PASSED
QC Report No.:
Checked by :
Inspect date :

③

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

(CUSTOMER NAME)

P/O:
C/NO:
MADE IN CHINA

P/O:
PART NO:
DESC:
Q'TY: PCS
N.W: KGS
G.W: KGS
MEAS:
DATE:

165

255

490

①

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	KG⊕	ORDER REF: 0420	SHEET 3 OF 3
UNIT	MM	DRAWN	KEVIN	APPROVED	FRANK 30/04/09	CUSTOMER: TE		
SCALE	NTS	MANU:				DATE:		

TOLERANCES UNLESS OTHERWISE STATED
X.= +/-1
.X=+/-0.5
.XX=+/-0.2

Specifications TELLC0280

The TELLC0280 is the telephone lead with 606 Socket and 2 Meter length of Telephone Cord.

Colour: Ivory.