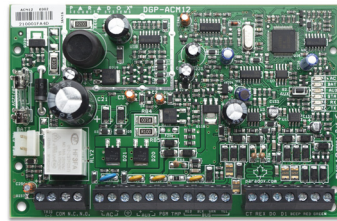


ACM12 Installation Manual V4.72 and higher

Supports EVOHD / EVO192 V4.5 and higher



Description

Thank you for choosing the ACM12 for your access control. The ACM12 is designed to be used with the Paradox EVO system. It allows you to manage access of one door, via card, pin or both, provide forced door and door left open detection, and arm / disarm functions. The ACM12 supports full Off-Line functionality, which stores the entire database in memory when the panel connection is lost and enables full synchronization upon restore. It supports one IN reader and one OUT reader if using 4-wire Paradox readers, or one IN reader only if using the 7-wire 26-bit Wiegand reader. The ACM12 also supports a REX, a door contact that can be an alarm zone, and a door locking device.

With accelerated response of up to 999 users, simple and minimal programming, as well as easy installation, the ACM12 is designed to provide you with a reliable and professional access solution.

Compatibility

ACM12 V4.5 and higher is compatible only with panels EVOHD V4.5 and higher and EVO192 V4.5 and higher.

Upgrade Note

When upgrading to the latest version, it is advisable to upgrade the panel first, and then upgrade the ACM12 module.

Off-Line Feature

The ACM12 V4.5 and higher fully supports Off-Line functionality. In the case of panel connection loss, the ACM12 will switch to Off-Line mode and will fully function with user access level and schedules; arm / disarm user permissions will be overridden. While resuming communications with the panel, all programming changes will be updated. In Off-Line mode, events are kept locally in the module and can be uploaded manually for each ACM12 when communication is restored.

Installation (Figure 1)

Connect the ACM12 as per the drawing below. When powering up, all ACM12 modules will synchronize with the panel and upload all user and schedule data. Typically, 100 users and 10 schedules will take about 50 seconds to upload. This will also take place upon resuming connection with the panel. Synchronization is indicated by RX/TX LEDs flashing together at 4 Hz. If an ACM12 V4.5 detects a connection to a different EVO panel, data will be erased and the new panel data will be synchronized.

POWER: The ACM12 should be powered with a 16 Vac 20Va. Battery should be connected.

Unlock Device Diode: When connecting a locking device, it is recommended to connect diode 1N4007 as per Figure 1, to keep the relay contacts reliability.

Firmware Upgrade: Should you need to upgrade the ACM12 firmware, connect the CV4USB A+ to Green and B- to Yellow, and power Red and Black.

Connection	Description	Connection	Description
TRIG	Shorting to ground will activate the unlock relay.	TMP	Tamper switch follow panel definition Section [3034] ACM12 programming section [003] option1 to enable.
COM/NC/NO	Unlocking relay, max 5A / 28 VDC AC - 16V 20 VAC	EVO BUS	Connect to EVO bus.
⊖	Additional Aux (-)	CT	Zone for door contact. Can be system zone Section [0400], EOL will follow panel global EOL panel section 3033 bit 7.
AUX	Use to power the Reader, REX, and other devices. Max output 600mA, fuseless shutdown.	REX	Request for exit detector connection, it is connected without EOL.
PGM	50mA output follow. Some predefined conditions, see programming Section [011].	D0	Connect to Green wire of the Reader.
CT	Door contact is used to monitor door condition and to identify door left open and forced door status.	D1	Connect to Yellow wire of Reader.

Turning Auxiliary Power ON / OFF (V4.52 and above)

Press and hold the AUX ON / OFF switch for 7 seconds. This toggles the auxiliary power ON or OFF.

IN / OUT Reader Assignment (V4.52 and above)

The reader that is detected first will be considered the IN reader, by default. The reader that is detected second will be considered the OUT reader.

Changing the Default Reader Assignment (V4.52 and above)

- Press and hold the AUX ON / OFF switch for 3 seconds. The ERROR, TX and RX LEDs flash for 2-3 seconds.
- Press any key or present an access card to the reader you want to designate as the IN reader. Automatically, the other reader will be designated as the OUT reader.

ACM12 Connection to PS45

Connect the ACM12's AC and ground to the PS45's Aux + and - connectors. You can power up to three ACM12 modules using the PS45 Power Supply instead of using separate transformers for each ACM12. Connect each ACM to the appropriate output, as shown below.

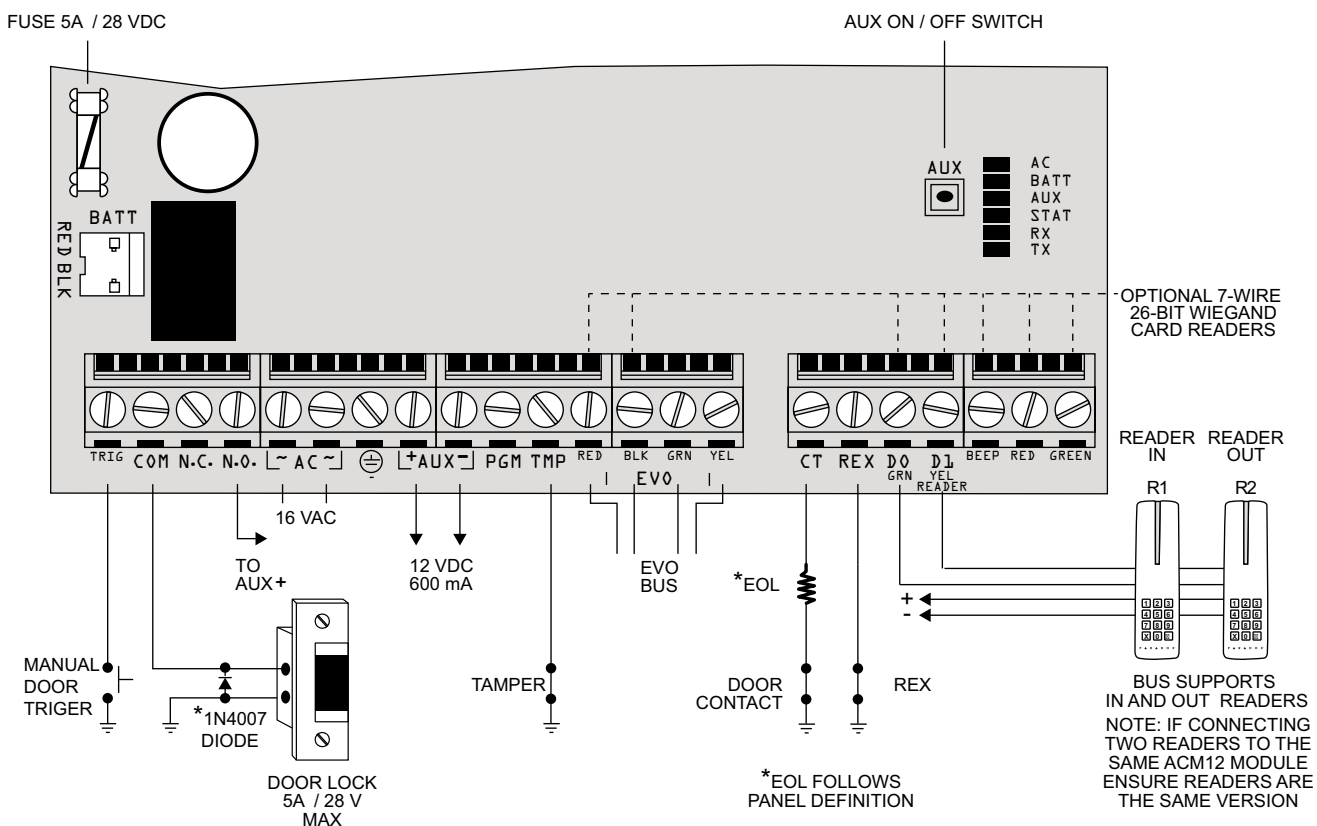
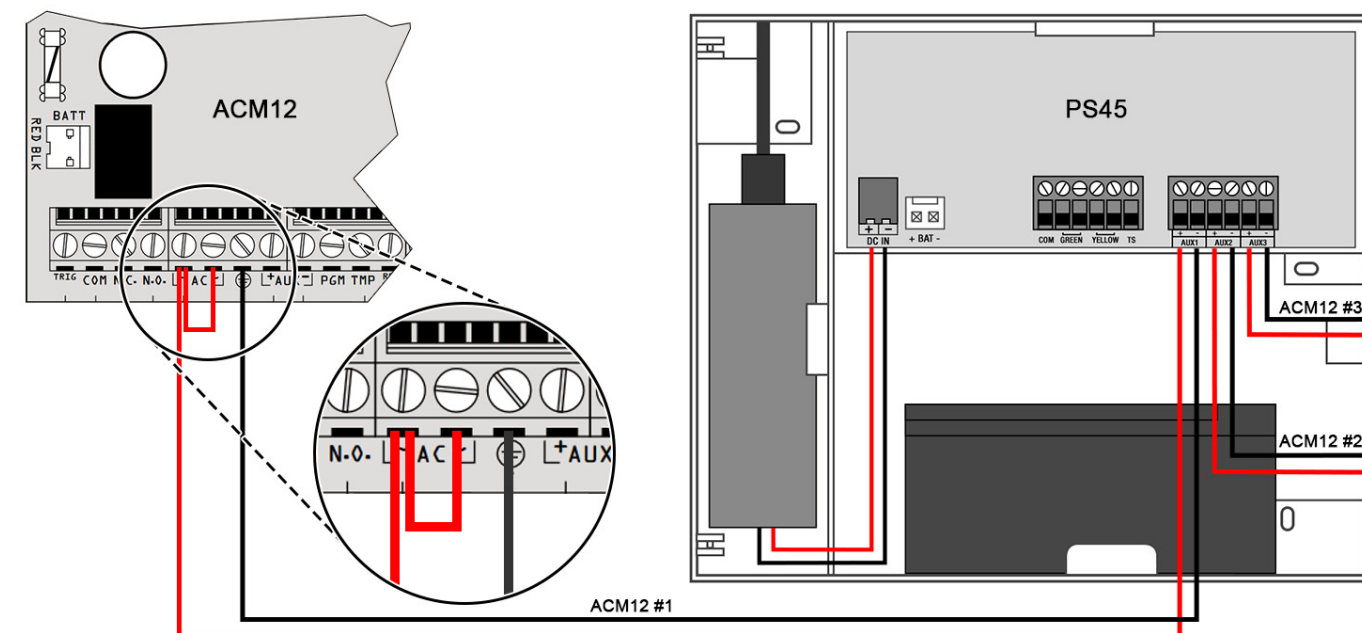


Figure 1



Programming via BabyWare or Keypad

Installer + Section [4003] + Serial Number of the ACM12.

* = Default

Section [001] General Options			
Option		OFF	ON
[1]	Tamper Input	Disabled*	Enabled
[2]	Battery Charging Current	350mA*	850mA
[3]	AC monitoring	Disabled	Enabled*
[4] & [5]		[4]	[5]
	Card only	OFF*	OFF*
	Card or PIN	ON	OFF
	Arm and Access: Card or PIN Disarm: Card and PIN	OFF	ON
	Card and PIN always	ON	ON
[6]	Unlock door on Fire Alarm	Disabled	Enabled*
[7]	Door forced open Alarm	Disabled*	Enabled
[8]	Card activates door unlocked schedule (V4.52 and above)	Disabled	Enabled*

Section	Data	Description	Default
[002]	__/__/__ (Seconds)	Door Unlocked Period	005
[003]	__/__/__ (Seconds)	Door Unlocked Period Extension (handicap use)	015
[004]	__/__/__ (Seconds)	Door Left Open warning delay	000
[005]	__/__/__ (Minutes)	Door Left Open Alarm delay from warning	001
[006]	__/__/__ (Minutes)	Safe Unlock delay	00
*[007]	__/__/__ (01 - 32)	1 st Unlock Door Schedule	00
*[008]	__/__/__ (01 - 32)	2 nd Unlock Door Schedule	00
*[009]	__/__/__ (01 - 32)	3 rd Unlock Door Schedule	00
*[010]	__/__/__ (01 - 32)	4 th Unlock Door Schedule	00

* Follow Panel User Schedules.

Section	Data	Description	Default
[011]	__/__	PGM Activation	00
00 : Arm 01 : Follow Door Unlock Schedule 02 : Follow Access Granted (will be activated for the unlock period) 03 : Follow Door Forced State 04 : Follow Door Left Open Warning / Alarm 05 : Utility Key 1 06 : Utility Key 2 07 : Utility Key 3 08 : Utility Key 4 09 : Utility Key 5 10 : Utility Key 6 11 : Utility Key 7 12 : Utility Key 8 13 – 99 : Future Use			

Section [012]			
Option		OFF	ON
[1]	Partition 1	Disabled	Enabled*
[2]	Partition 2	Disabled*	Enabled
[3]	Partition 3	Disabled*	Enabled
[4]	Partition 4	Disabled*	Enabled
[5]	Partition 5	Disabled*	Enabled
[6]	Partition 6	Disabled*	Enabled
[7]	Partition 7	Disabled*	Enabled
[8]	Partition 8	Disabled*	Enabled

Section [013]			
Option		OFF	ON
[1]	Re-lock option	On door opening	On door closure
[2]	On access granted / utility key event	PGM follow lock delay	PGM toggle state
[3]	Unlock schedule override on access granted	Disabled	Card locks door
[4]	Door left open beep on reader	Disabled	Enable
[5] - [8]	For future use	-	-

LED Feedback

AC	On (green) when module has AC power.
BATT	On (green) when charging and during battery tests. Battery test every one minute.
AUX	On (Yellow) when auxiliary output is active.
STAT	On or flash (Red) when an error occurs. Refer to Error Display table below.
RX	Flashes (Green) when receiving information from the panel.
TX	Flashes (Green) when transmitting information to the panel.

* RX / TX will flash together at a frequency of 4Hz when synchronization takes place.

Error Display

STAT (Red)	RX (Green)	TX (Green)	Condition
ON	OFF	OFF	EVO bus is shorted / No clock / No data (offline)
ON	OFF	ON	Wrong data / Invalid EVO address, too many modules or incompatible panel version
ON	ON	ON	EVO bus YEL and GRN reversed
FLASH	----	----	EVO bus voltage is low (less than 9V)

Technical Specifications

User Capacity	999
Door Unlock Schedules	4 (total of 8 periods)
User Schedules Capacity	32
User Security Levels	15
Power	16 Vac, 20 VA
Auxiliary Output	12 Vdc, 600 mA, 1A fuseless shutdown
Battery	12 Vdc, Gel Cell. Connection protected with 5A fuse
Door Unlock	Form C relay rated at 5A / 28 Vdc
PGM Output	50 mA predefined definitions
Device Connections	Two Paradox 4-wire readers or one 7-wire 26-bit Wiegand reader, door contact, REX device, tamper
Manual Unlock	Negative trigger input
Control Panel Compatibility	EVOHD Control Panel V4.5 and above EVO192 Control Panel V4.5 and above
Metal Box (optional)	Minimum 20 x 25.5 x 7.6 cm (8 x 10 x 3 in.) metal box
Dimensions	14 x 9.2 x 2.5 cm (5.5 x 3.6 x 1 in.)

Warranty

Please refer to the Limited Warranty Statement found on the website www.paradox.com or contact your local distributor.

© 2021 Paradox Security Systems (Bahamas) Ltd. All rights reserved. Specifications may change without prior notice.

Patents

One or more of the following US patents may apply: 7046142, 6215399, 6111256, 6104319, 5920259, 5886632, 5721542, 5287111, and RE39406 and other pending patents may apply. Canadian and international patents may also apply.



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™

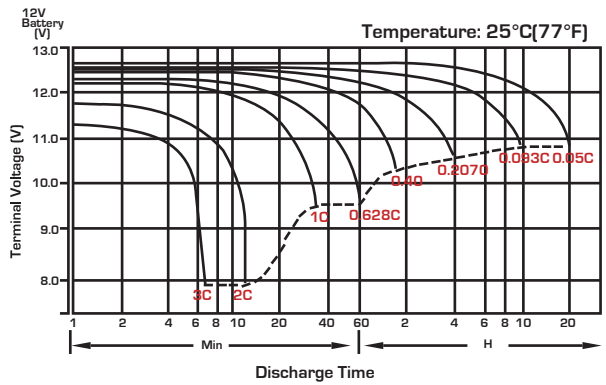


Specifications PRXK-TK278

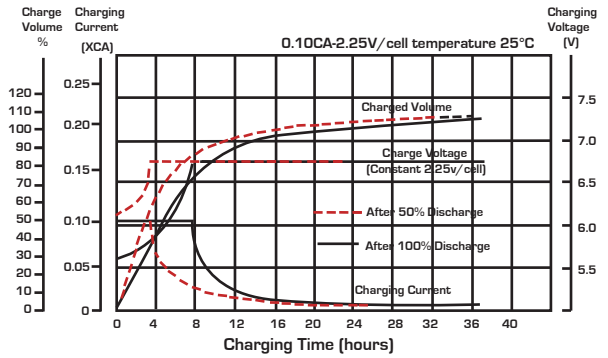
The PRXK-TK278 is a BOM Kit for 1x tamper switch PRX2502302000-P2C and 1x tamper bracket PRX2781030000-P2C to suit with Paradox Metal Box Enclosure PRX2780000033-P2C; to protect against tampering (opening door or removal from wall).

P ▲ R ▲ D O X™

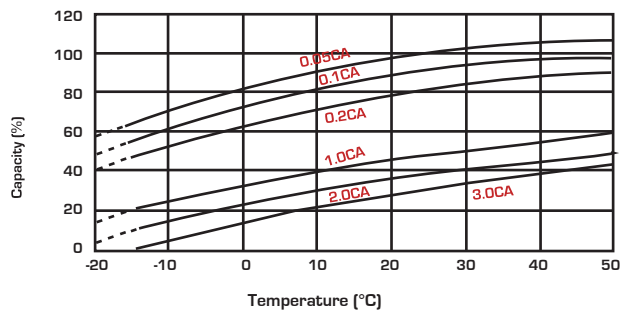
Discharge Characteristics



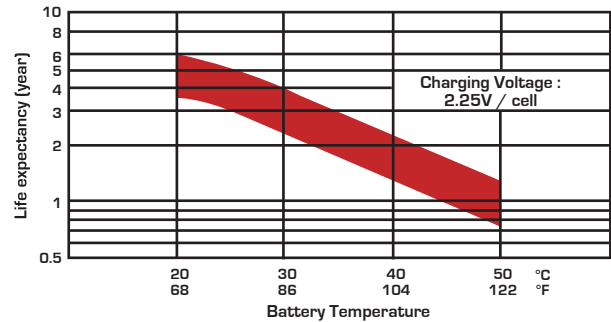
Float Charging Characteristics



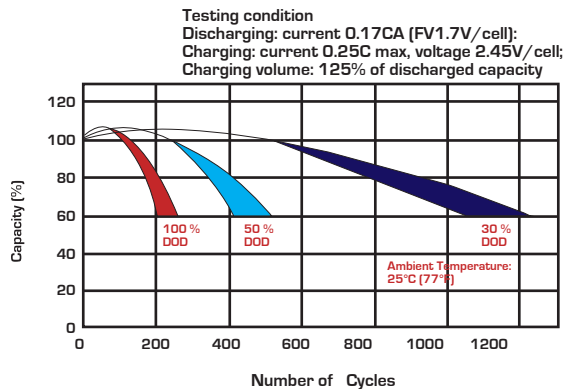
Temperature Effects in Relation to Battery Capacity



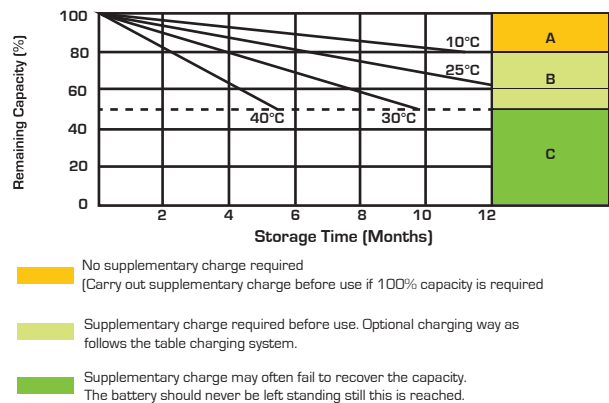
Effect of Temperature on Long Term Float Life



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



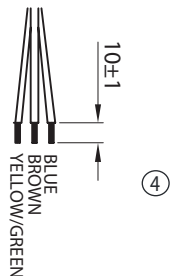
Sealed Performance Batteries

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

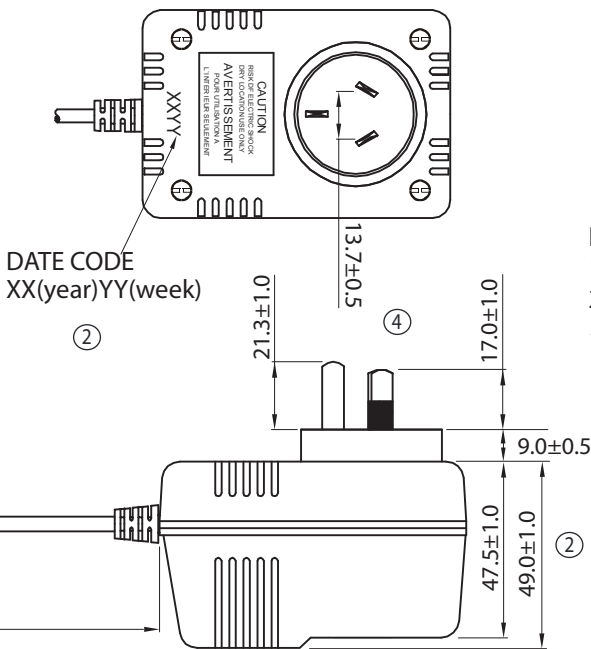
sales@spb.net.au | www.sealedperformance.com.au

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

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



④



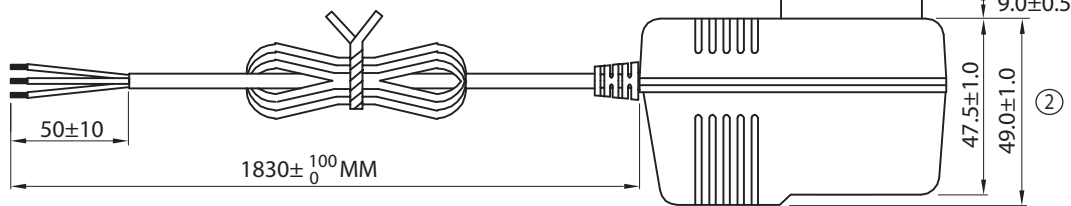
DATE CODE
XX(year)YY(week)

②

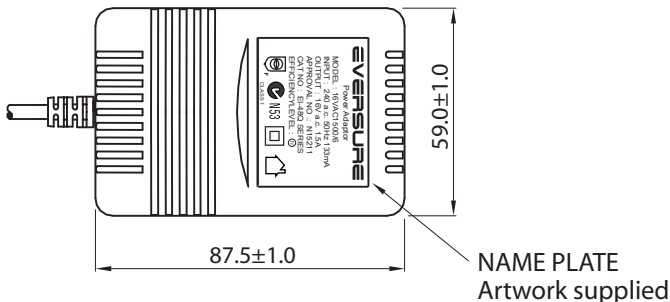
④

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

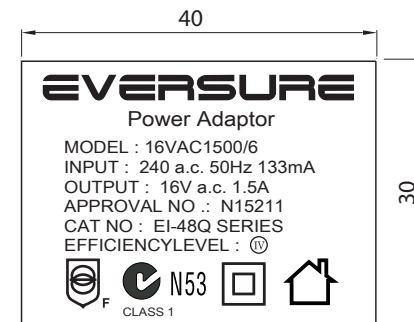


②




NAME PLATE
Artwork supplied

	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



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

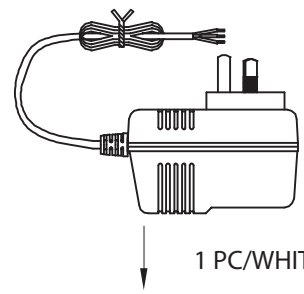
DESCRIPTION: AC ADAPTOR EI-48Q,16VAC1500mA, 3 WIRE - MEPS



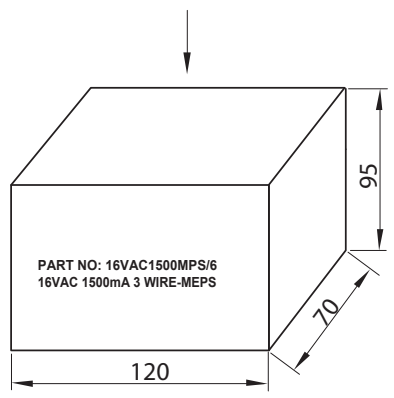
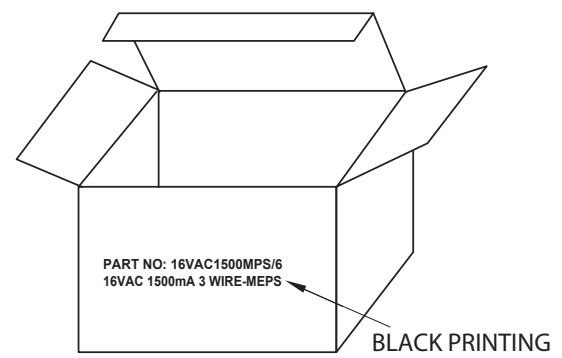
THIS DRAWING AND SPECIFICATIONS ARE THE PROPERTY OF TELEPHONE EQUIPMENT (NSW) Pty Ltd AND SHALL NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF TELEPHONE EQUIPMENT (NSW) Pty Ltd

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:				

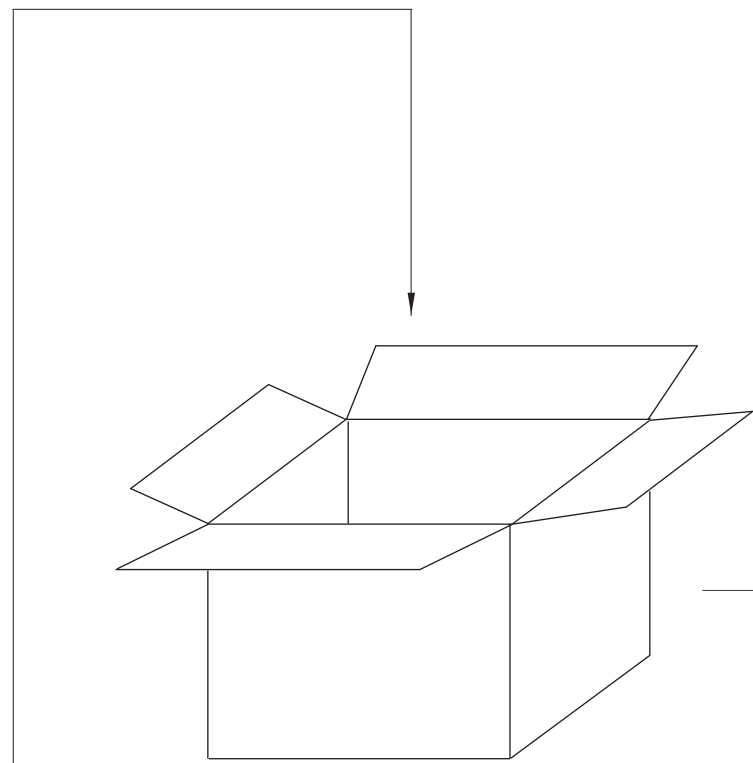
	REVISED	DRAWN	APPROVED
①	AMENDED PACKING QTY AND CARTON SIZE	JACKY 10/08/09	GARY 10/08/09
②	ADDED DATE CODE ON CASE AND DIMENSIONS	JACKY 07/12/09	GARY 07/12/09
③	ADDED PASSED LABEL ON CARTON	TODD 22/12/10	JACKY 22/12/10
④	AMENDED AC PINS DIMENSION & ADDED WIRES COLORS	ANLEI 01/11/12	ANLEI 01/11/12
⑤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



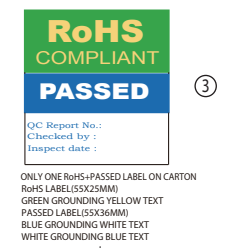
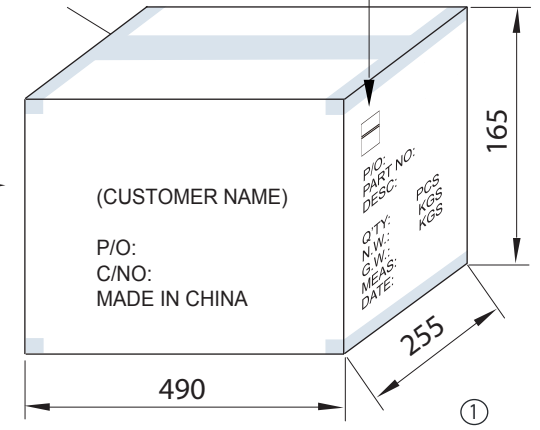
1 PC/WHITE BOX



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:			