ROKONET
RISCO GROUP

ProSYS – ACM
Advanced
Communication Module

For use with Rokonet's Security Systems

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Introduction

The ACM (Advanced Communication Module) is a communication accessory for the ProSYS control panel, for enhancing its hardware and software connectivity. It enables TCP/IP Ethernet connectivity and enables usage of existing LAN and WAN infrastructures for the transfer of security data. The ACM offers full functionality of the ProSYS over TCP/IP, and provides Ethernet and Fast Modem Interface.

ACM Encryption is of the SSL/TLS type. The module can be simultaneously accessed by multiple clients and seamlessly connects to Upload/Download software, thus enabling remote access and monitoring.

ACM versions include:

ACM Basic – includes RS485 and Ethernet interfaces

ACM Basic + Modem – includes Ethernet interfaces plus fast modem interface

ACM Full future configuration with interfaces is shown in Figure 1.

> **NOTE:**
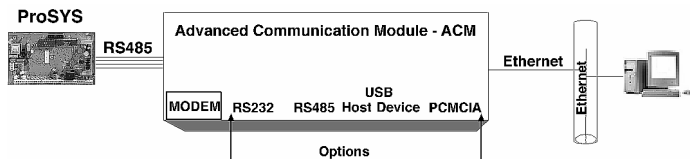> The configuration described in Figure 1 is a full **future** configuration!

Figure 1: ACM Interfaces - Full Configuration

ACM Features

♦ Provides IP connectivity over networks supporting the TCP/IP protocol (LAN and WAN).

♦ Fully supervised accessory of the ProSYS

♦ Secure communication with full SSL stack, 256 bit encryption, cipher key changed frequently making it difficult to break the code

♦ IP Receiver software available for compatibility with Monitoring Station applications

♦ Compatible with 10BaseT and 100BaseT networks

♦ Supports simultaneous multiple channel Ethernet communication

♦ Selected events may be reported to two different email addresses. Security Manager can receive security events, while installer receives technical indications only.

♦ Embedded web server with application links into the ProSYS control panel

♦ Supports dynamic network addressing (DHCP)

♦ Module firmware is remotely upgradeable when a new version is released

♦ Customizable according to project requirements

♦ Fast modem interface 56-kbps

Compatibility

The ACM module is compatible with the ProSYS 128, software version 3.10 and above.
The ACM is compatible with Rokonet U/D Software Version 1.8 and above.

Mounting & Connections

The ACM may be mounted onto the ProSYS main board using the provided plastic spacers or in a special accessory box (P/N: RP128B300UKA).

NOTES:

1. Handle the ACM module with care when installing it.

2. When attaching an ACM box to the wall, it is recommended to use Ø4.2mm, 32mm length screws (DIN 7981 4.2X32 ZP).

3. In order to meet EMC requirements, it is recommended that when the ACM is installed in a special accessory box use a ferrite bead manufactured by Fair-Rite p/n 2643626502 with one turn at the 4-wire cable Bus close to the connector inside the metal box.

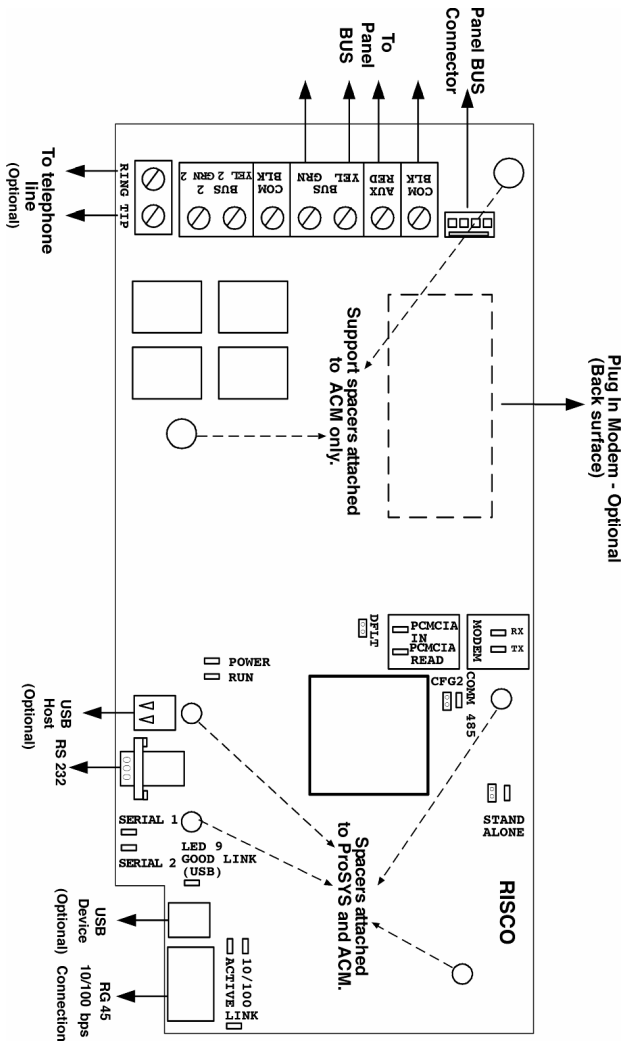# To connect the ACM to the ProSYS, perform the following steps:

IMPORTANT:

1. Disconnect all power sources from the ProSYS panel prior to servicing the ACM or connecting it to the panel BUS!

2. Before connecting the ACM, calculate and check that the power drawn by the ACM, together with all accessories connected to the ProSYS, is within the power supply current range! Add a power supply module if required.

1. Mount the ProSYS main board inside the BOX as described in the Installer manual 5IN128IM.
2. Attach the 4 plastic spacers using the provided plastic screws to the ProSYS main holes shown in Figure 2.
3. Connect 2 plastic support spacers to the ACM board (using plastic screws) as shown in Figure 2.
4. Align the ACM mounting holes with the spacers on the ProSYS panel and snap into place.
5. Connect the provided 4-wire cable from the ACM BUS connector to the ProSYS BUS connector.
6. Connect the ACM to the Ethernet by plugging an appropriate Ethernet cable plug into the RG-45 connector on the ACM (see Figure 2).

NOTES:

In order to meet EMC requirements, it is recommended to use a ferrite bead manufactured by Fair-Rite p/n 0446167281 with one turn at the Ethernet cable close to the connector inside the metal box.

Figure 2: ACM Layout with Spacers

Advanced Communication Module - Installation Guide

Terminal Block Wiring

Terminal	Description
AUX RED **COM BLK** **BUS YEL GRN**	Used to connect the ACM to the ProSYS Panel board (the terminals are connected in parallel to the panel BUS connector).
COM BLK **BUS 2 YEL2 GRN2**	Provision for optional functionality
TIP, RING	Used for PSTN telephone line connection (for ACM version that includes the modem option).

Jumper Settings

Jumper	Description
STAND ALONE	Used to enable a local U/D connection to the ProSYS using a local PC, while the ACM is connected to the BUS. **2 pins configuration:** The ACM U/D channel is disabled, and a local U/D connection to the ProSYS Bus is enabled. **NOTE:** Sending information from the panel via the ACM is functioning normally. **1 pin (default):** Local U/D connection to the ProSYS Bus is disabled, and the ACM channel is enabled.
DFLT	Used to restore the default software provided by the manufacturer (e.g. when remote software upgrade fails). **2 pins configuration:** Enables restoring of the default manufacturer's software. To restore the ACM to the default manufacturers software: 1) Disconnect power from the ACM 2) Place the DFLT jumper on its 2 pins. 3) Reconnect the power to the ACM. **1 pin (default):** Restoring of the default manufacturer's software is not enabled.

Jumper	Description
CFG2	Provision for optional functionality

LED Indication

LED	Description
LINK (Yellow)	Indicates appropriate communication between the ACM and the Ethernet network. **ON**: Ethernet communication OK. **OFF**: Ethernet connection is not working (check cable).
ACTIV (Green)	Indicates either active or non-active Ethernet communication. **ON**: Data packets are being transmitted or received via the Ethernet. **OFF**: No data packets are being transmitted or received via the Ethernet.
10/100 (Green)	Indicates data transmission speed over the Ethernet (the ACM automatically detects the speed). **ON**: 100 Mbps **OFF**: 10 Mbps
SERIAL 1 (optional) (Green)	Indicates ACM communication with a device via the optional RS232 serial port 1.
SERIAL 2 (optional) (Green)	Indicates ACM communication with a device via the optional RS232 serial port 2.
GOOD LINK (USB) - optional (Green)	Indicates communication between the ACM and a device connected to the optional USB port.
POWER (Red)	Indicates communication status between the ACM and the ProSYS main panel via the RS 485 BUS. **ON**: Normal communication with the ProSYS panel **OFF**: No communication with the ProSYS panel **Slow flashing**: When BUS communication is interrupted, during ProSYS programming, or if the ACM has not been programmed correctly during installation.
MODEM RX (Green)	Indicates data reception via the ACM's optional modem. **ON**: Data reception is in process. **OFF**: Data reception is not in process.

LED	Description
MODEM TX (Red)	Indicates data transmission via the ACM's optional modem. **ON**: Data transmission is in process. **OFF**: Data transmission is not in process.
STAND ALONE (Yellow)	Indicates either enabled or disabled local U/D connection to the ProSYS. **ON**: Local U/D is enabled and ACM U/D channel is disabled. **OFF**: Local U/D is disabled and ACM U/D channel is enabled.
PCMCIA IN (optional) (Green)	Indicates presence of PCMCIA card.
PCMCIA READ (optional) (Yellow)	Indicates communication between the ACM and PCMCIA card.
COMM 485 (optional) (Red)	Indicates communication status via an optional additional RS485 port.

Programming the ACM - General

The ACM Module is programmed in a similar manner to all ProSYS accessories, via the LCD keypad or via the UD Software, locally or remotely.
The following information refers to ACM programming features added for ACM functionality. We recommend reading and fully understanding the ProSYS Installation and User Manuals, before programming the ACM.

NOTE:
The term "Provision for" in the following programming instructions, refers to optional additional functionality!

Adding Deleting the ACM

To add/delete the ACM module, perform the following steps:
1. From the ProSYS installer menu, enter the ADD/Delete option (Quick Key [7][1]).
2. Press [9][3] to access the ACM module option.
3. Use the (*Stay*) key to select either NONE (no ACM) or ACM1 (ACM installed).
4. Press (*Disarm #*) to confirm your selection.

Defining MS Connection Type

Connection between the ProSYS panel and the monitoring station (MS) is configured via the *Dialer* Menu.
1. From the ProSYS installer menu, access the Dialer menu [5].
2. Press [1] to access the Link Up sub-menu.
3. Use the quick key combinations described in the table below to access your desired option and configure your system as desired.

Quick Key	Parameter
[5][1][1]	**MS LINK UP** Defines the link up parameters between the monitoring station receiver and the ProSYS panel.
[5][1][1][1]	**MS 1 LINK UP** Defines the link up parameters used for the first monitoring station.
NOTE: 3 link ups are available.	

Quick Key	Parameter
[5][1][1][1][1]	**MS#1 TEL. NUM** Defines the CS (Monitoring Station) telephone number connected to the ProSYS panel. Up to 32 digits may be typed in to define the CS telephone numbers, including dialing prefixes and area codes or special letters. For more information refer to the ProSYS Installer manual.
[5][1][1][1][2]	**MS#1 IP ADDRESS** The MS IP address that identifies the receiver on the network. **Default**: **192.168.001.010**
[5][1][1][1][3]	**MS#1 PORT** The MS port address of the receiver on the network. **Default**: **03010**
[5][1][1][1][4]	**MS#1 CHANNEL** Defines the type of connection to the MS.
[5][1][1][1][4][1]	**INTERNAL PSTN** The reporting to the monitoring station will be performed by the telephone line connected to the ProSYS. (See quick key [5][1][1][1][1])
[5][1][1][1][4][2]	**EXTERNAL IP** The reporting to the MS is performed via the TCP/IP network
[5][1][2]	**REMOTE U/D TEL** The phone number to which the alarm company's computer, equipped with the Upload/Download software, is connected.

Defining ACM Parameters

From the Dialer menu [5] press [0][2] to enter *ACM Parameters* Menu.

Quick Key	Parameter
[5][0][2][1]	**ACM IP ADDRESS** The static IP address that identifies the ACM module on the network. **Default**: 192.168.001.100
[5][0][2][2]	**ACM U/D PORT** The port address of the ACM U/D application. **Default**: 03000
[5][0][2][3]	**ACM AUX 1 PORT** The port address of the ACM AUX. protocol 1. The ACM AUX 1 protocol supports the Modbus TCP/IP protocol by default. **Default**: 00502
[5][0][2][4]	**ACM AUX 2 PORT** Provision for optional functionality
[5][0][2][5]	**ACM AUX 3 PORT** Provision for optional functionality
[5][0][2][6]	**SUBNET IP MASK** The definition of the network portion of the IP address. This location must be configured that all IP addresses up to and including the local gateway are allowed. **Default**: 255.255.255.0
[5][0][2][7]	**GATEWAY IP ADDR** The IP address of the local Gateway, which enables communication settings to other LAN segments. This address is the IP address of the router connected to the same LAN segment as the ACM module. **Default**: 192.168.001.254

Quick Key	Parameter
[5][0][2][8]-[9]	**REMOTE UPGRADE of ACM**
	Remote upgrading allows remote downloading of upgraded software over the network. The new upgraded software is stored in a specific IP address on the network. Once the ACM is informed of the new software, it refers to the IP address to download the new software.
[5][0][2][8]	**S.W UPDATE IP**
	The IP address that the ACM turns to, for downloading the upgraded software. **Default:192.168.100.001**
[5][0][2][9]	**S.W UPDATE PORT**
	The port address that the ACM turns to, during the process of software upgrading. **Default**: 00080
[5][0][2][0]	More …
[5][0][2][0][1]	**U/D IP MASK**
	The IP address from which a connection to the ACM can be established via the U/D software. **Default**: 0.0.0.0
[5][0][2][0][2]	**ACM NET NAME**
	A text name used to identify the ACM module over the network. **Default: acm** **Range**: 16 characters of any type
[5][0][2][0][3]	**DOMAIN NAME SYSTEM 1# IP**
	Provision for optional functionality
[5][0][2][0][4]	**DOMAIN NAME SYSTEM 2# IP**
	Provision for optional functionality
[5][0][2][0][5]	**NTP IP**
	Provision for optional functionality
[5][0][2][0][6]	**NTP PORT**
	Provision for optional functionality
[5][0][2][0][7]	**NTP UPD TIME (Update Time)**
	Provision for optional functionality

From the Dialer menu [5], press [0][3] to enter the *ACM Control parameters* Menu.

Quick Key	Parameter
[5][0][3][1]	**ACM CONFIGURATION** Defines the ACM parameters configuration.
[5][0][3][1][1]	**CLIENT ATN** Provision for optional functionality
[5][0][3][1][2]	**DHCP IP** Defines whether the IP address, which the ACM refers to, is static or dynamic. **YES**: The ACM refers to an IP address provided by the DHCP **NO**: The ACM refers to the ACM static IP Address defined by quick key [5][0][2][1]. **Default**: **NO**
[5][0][3][2]	**ACM U/D CONFIGURATION** Defines the authorization type when using the U/D software application over the Ethernet network; ♦ Disabled ♦ Full Control ♦ View Only (optional functionality) ♦ User Control (optional functionality) ♦ Installer Control (optional functionality) **Default**: **Full Control**
[5][0][3][3]	**ACM AUX1 CONFIGURATION** Defines the authorization type when using the received application by the ACM auxiliary 1 protocol (Modbus). ♦ Disabled ♦ Full Control ♦ View Only (optional functionality) ♦ User Control (optional functionality) ♦ Installer Control only (optional functionality) **Default: Disabled**
[5][0][3][4]	**ACM AUX2 CONFIGURATION** Provision for optional functionality
[5][0][3][5]	**ACM AUX3 CONFIGURATION**

Quick Key	Parameter
	Provision for optional functionality

Defining the Network Control Parameters

From the *Dialer* menu [5], press [0][4] to enter the *Network Control* parameters Menu.

Quick Key	Parameter
[5][0][4]	This option contains parameters that specify counters for the ACM to establish a connection with the network. Provision for optional functionality

Defining ACM Special Functions

From the *Dialer* menu [5], press [0][4] to enter the *Network Control* parameters Menu.

Quick Key	Parameter
[5][0][5]	The ACM Special function menu enables you to perform special operations of the ACM. This option is applicable for ACM with dedicated features that are customized per project (e.g. performing remote upgrade of the ACM). A confirmation beep is heard in the keypad, indicating that the command was successfully sent to the ACM, followed by the following message: "*SPECIAL MESSAGE ACTIVATED*". **Default: 001** **Range: 001-255**

Viewing ACM Version and Parameters

Quick Key	Parameter
[5][0][6]	This menu is used to view the ACM hardware and software configurations. The information includes 4 parameters as follows: ♦ ACM MAC Address ♦ ACM Software Version ♦ ACM Hardware Version

Quick Key	Parameter
	♦ ACM Project Number If a communication trouble with the ACM occurs, the "*COMMUNICATION TROUBLE*" message appears and 3 beeps are heard from the keypad.

E-MAIL Report

Messages to predefined email accounts may be sent by the ACM.

Quick Key	Parameter
[5][7][5][1]	**MAIL 1 FOLLOW** Defines whether events defined in the telephone FM 1 menu (See Quick Key [5][7][4][1][2] / [5][7][4][1][3]), are reported to E-mail 1 or not. **Yes**: Events are reported to FM 1 and E-mail 1 as well. **No**: Events reported to FM 1 phone only. **Default**: **No**
[5][7][5][2]	**MAIL 2 FOLLOW** Defines whether the events defined for telephone FM 2 are reported to e-mail 2 as well or not. **Default**: **No**
[5][7][5][3]	**MAIL IP ADDRESS** The IP address of the ACM mail server. **Default**: **192.168.001.253**
[5][7][5][4]	**MAIL SMTP PORT** The port address of the ACM SMTP mail server port, used to send messages. **Default**: **00025**
[5][7][5][5]	**MAIL POP3 PORT** The port address of the ACM POP3 mail server port, used to retrieve e-mails. **Default**: **00110**
[5][7][5][6]	**E-MAIL PREFIX** The ACM email address prefix; 16 characters are used to define the ACM email prefix (for example in the ACM@rokonet.co.il e-mail address, the prefix name is "ACM"). **Default**: **acm**

Quick Key	Parameter
[5][7][5][7]	**E-MAIL Domain** The ACM email address domain name, which identifies the web server of the ACM. For example, in the email address ACM@rokonet.co.il, the domain name is rokonet.co.il. NOTE: Do not enter the @ sign. Default: YourCompany.com
[5][7][5][8]	**MAIL 1 E-MAIL** The 1st email address that is used for events reporting. **Default: user1@rokonet.co.il**
[5][7][5][9]	**MAIL 2 E-MAIL** The 2nd email address that is used for events reporting. **Default: user2@rokonet.co.il**

Events Report Over IP

In addition to local events printing (using a local printer connected to the ProSYS), the ACM will enable storing of unlimited amount of events over Ethernet resources, which can be used for backup and analysis.

Quick Key	Parameter
[5][7][6][1]	**ENABLE** Provision for optional functionality
[5][7][6][2]	**E-LOG IP ADDRESS** Provision for optional functionality
[5][7][6][3]	**E-LOG IP PORT** Provision for optional functionality

Getting ACM IP Address

In some installations the ACM IP address might be configured to be dynamic (see quick key [5][0][3][1][2] for DHCP IP address). In this case the host server will assign the IP address.

Sometimes it might be needed to get the IP address, from someone on the premises in order to maintain a proper operation of the ACM over the network.

To get the ACM IP address:

1. From the ProSYS user menu enter Maintenance by pressing [*][4]
2. Enter the Grand Master Code followed by the $\left(\stackrel{\#}{Disarm} \right)$.
3. Press [0][3] for the option "GET ACM IP".

4. Press $\left(\underset{Disarm}{\#}\right)$ to confirm; the desired ACM IP address appears on the LCD.

Appendix – A: IP Address Table

Description	Default	Programming Location to Configure	User Programming
MS 1 IP Address	192.168.001.010	[5][1][1][1][2][1]	
MS 2 IP Address	192.168.001.011	[5][1][1][2][2][1]	
MS 3 IP Address	192.168.001.012	[5][1][1][3][2][1]	
ACM IP Address	192.168.001.100	[5][0][2][1]	
SUBNET IP MASK	255.255.255.000	[5][0][2][6]	
Gateway IP	192.168.001.254	[5][0][2][7]	
Software update IP	192.168.100.001	[5][0][2][8]	
Mail IP Address	192.168.001.253	[5][7][5][3]	
Event Log IP Address	192.168.001.020	5][7][6][2]	
DNS#1 SERVER IP	192.168.100.251	TBD	
DNS#2 SERVER IP	192.168.100.252	TBD	
NTP SERVER IP	192.168.000.060	[5][0][2][0][5]	
U/D IP MASK	000.000.000.000	[5][0][2][0][1]	

Appendix – B: Port Table

Description	Default	Programming Location to Configure	User Programming
MS Port	03010	[5][1][1][1][2][2]	
ACM U/D Port	03000	[5][0][2][2]	
ACM AUX 1 Port	00502	[5][0][2][3]	
ACM AUX2 PORT	03001	[5][0][2][4]	
ACM AUX3 PORT	03002	[5][0][2][5]	
Software Update IP	00080	[5][0][2][9]	
Mail SMTP Port	00025	[5][7][5][4]	
Mail POP3 Port	00110	[5][7][5][5]	
NTP SERVER PORT	00123	[5][0][2][0][6]	
Event Log IP Port	03009	[5][7][6][3]	

Appendix – C: Common Terms and Definitions

Term	Definition
DHCP	Short for Dynamic Host Configuration Protocol; a protocol for assigning dynamic IP addresses to devices on the network.
DNS **Domain Name System/Service**	An internet service that translates domain names into IP addresses
Domain Name	Domain names are typically in a three-level format. The top level denotes the type of organization, e.g. "com" or "edu"; the second level is the top level plus the organization name and the third level identifies a specific host server at the address, such as the "www". A domain name is ultimately mapped to an IP address, but two or more domain names can be mapped to the same IP address. The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots, e.g. www.rokonet.com
Ethernet	Telecommunications networking protocol; a standard computer interconnection method with a data rate of 100 megabits per second . The original specification requires coaxial cable as the communications medium, but costs have been reduced through the employment of simple paired wires
IP Address	Number that uniquely identifies each computer on the Internet.
Gateway	A combination of hardware and software that links two types of networks.
LAN	Communications network consisting of many computers within a local area, such as a single building or company complex
Node	Device connected to a network, e.g. client, server, hub, ACM module etc.
Network	Two or more computers and peripheral equipment (e.g., printers) that are connected with one another for the purpose of exchanging data electronically.
Port	Hardware interface by which a Computer communicates with another device or system
POP3	Short for Post Office Protocol; a protocol used to retrieve an e-mail from a mail server.

Term	Definition
SMTP	Short for Simple Mail Transfer Protocol, a protocol for sending e-mail messages between servers. SMTP is generally used to send messages from a mail client to a mail server. This is why you need to specify both the POP server and the SMTP server, when you configure your e-mail application.
SSL	Short for Secure Socket Layer; is a protocol that provides privacy and integrity between two communicating applications using TCP/IP
Subnet	Portions of networks, which share the same common address format. A subnet in a TCP/IP network that uses the same first three set of numbers (e.g. 198.63.45) indicating it is on the same network. A subnet can be used to increase the bandwidth on the network by breaking up the network into portions or segments.
WAN (Wide Area Network)	WANs are built to provide communication solutions for organizations or people who need to exchange digital information between two distant places. The main purpose of a WAN is to provide reliable, fast and safe communication between two or more places (Nodes) with low delays and at low prices. WANs enable an organization to have one integral network between all its departments and offices, even if they are not all in the same building or city, providing communication between the organization and the rest of the world.
Web Service/Sites	A group of World Wide Web pages usually containing hyperlinks to each other and made available online by an individual, company, educational institution, government, or organization

Technical Specification

ACM Card Dimensions: 180mm x 85mm
Current Consumption: ~300mA @13VDC
Operating Voltage: 9-16VDC
Operating Temperature: 0°-55°C
Storage Temperature: 0°-85°C

Ordering Information

Part Numbers	Description
RP128AB0100A	ACM Basic version
RP128AA0100A	ACM Basic + Modem

Customer Information

RTTE COMPLIANCE STATEMENT
Hereby, Rokonet Electronics Ltd, declares that this equipment is in
compliance with the essential requirements and other relevant
provisions of Directive 1999/5/EC.

Rokonet Limited Warranty

Rokonet Electronics, Ltd. and its subsidiaries and affiliates ("Seller") warrants its products to be free from defects in materials and workmanship under normal use for 12 months from the date of production. Because Seller does not install or connect the product and because the product may be used in conjunction with products not manufactured by the Seller, Seller cannot guarantee the performance of the security system which uses this product. Sellers obligation and liability under this warranty is expressly limited to repairing and replacing, at Sellers option, within a reasonable time after the date of delivery, any product not meeting the specifications. Seller makes no other warranty, expressed or implied, and makes no warranty of merchantability or of fitness for any particular purpose.

In no case shall seller be liable for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever.

Sellers obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay.

Seller does not represent that its product may not be compromised or circumvented; that the product will prevent any persona; injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery or fire without warning, but is not insurance or a guaranty that such will not occur or that there will be no personal injury or property loss as a result.

Consequently seller shall have no liability for any personal injury, property damage or loss based on a claim that the product fails to give warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising from under this limited warranty or otherwise, regardless of cause or origin, sellers maximum liability shall not exceed the purchase price of the product, which shall be complete and exclusive remedy against seller. No employee or representative of Seller is authorized to change this warranty in any way or grant any other warranty.

Contacting Rokonet

Rokonet Electronics Ltd. is committed to customer service and product support. You can contact us through our website (www.rokonet.com) or at the following addresses:

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$C \in \mathbf{\Omega}$