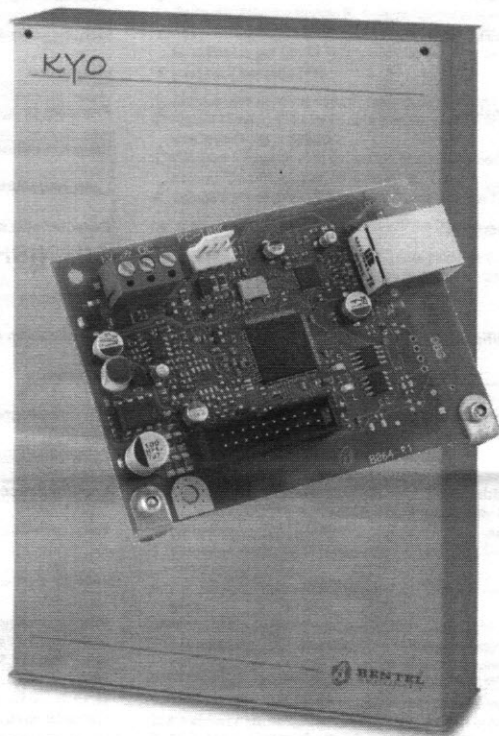# KYO320

## CENTRALE MULTIFUNZIONE ESPANDIBILE
## EXPANDABLE MULTIFUNCTION CONTROL PANEL
## CENTRAL BUS MULTIFONCTION
## CENTRAL MULTIFUNCTIÓN MODULAR

KYO

**K-NET**

## MODULO IP
## IP MODULE
## MODULE IP
## MÓDULO IP

### MANUALE D'INSTALLAZIONE
### INSTALLATION MANUAL
### MANUEL D'INSTALLATION
### MANUAL DE INSTALACION

**BENTEL**
SECURITY

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# INDICE-TABLE OF CONTENTS-SOMMAIRE

Per programmare il Modulo IP K-NET fornito con questo manuale usare esclusivamente l'applicazione **KYO320-300-100** del pacchetto **Bentel Security Suite** versione **5.5.0** o superiore.
La BENTEL SECURITY declina ogni responsabilità nel caso in cui la Centrale venga manomessa da personale non autorizzato.
L'installazione del Modulo IP K-NET deve essere effettuata a regola d'arte, in accordo con le norme vigenti.

Il contenuto di questo manuale può essere soggetto a modifiche senza preavviso e non rappresenta un impegno da parte della BENTEL SECURITY srl.

To program IP Module K-NET supplied with this manual, underline use the KYO320-300-100 application in the **Bentel Security Suite** package, version **5.5.0** or higher.
BENTEL SECURITY does not accept any responsibility if the Control panel is handled by unauthorized personnel.
The installation of IP Module K-NET should be done in a state of the art mode, according to existing standards.

The contents of this manual may be subject to changes without any former warning and does not represent any commitment on the part of BENTEL SECURITY srl.

Pour programmer le module IP K-NET fourni avec ce manuel, utiliser exclusivement l'application **KYO320-300-100** du progiciel **Bentel Security Suite** version **5.5.0** ou supérieure.
BENTEL SECURITY décline toute responsabilité au cas où la centrale serait forcée par du personnel non autorisé.
L'installation du module IP K-NET doit être effectuée dans les règles de l'art, en accord avec les normes en vigueur.

Le contenu de ce manuel peut être sujet à des modifications sans préavis et n'engage aucunement BENTEL SECURITY srl.

Para programar el Módulo K-NET acompañado de estas instrucciones, utilizar exclusivamente la aplicación **KYO320-300-100** del paquete **Bentel Security Suite** versión **5.5.0** o superiore.
La BENTEL SECURITY declina cualquier tipo de responsabilidad en el caso que el Módulo K-NET suministrado con estas instrucciones sea forzado por personal no autorizado. La instalación del Módulo K-NET debe regularse perfectamente, respetando las normas vigentes.

El contenido de estas instrucciones puede modificarse sin preaviso y no implica un compromiso por parte de BENTEL SECURITY s.r.l.

## Overview

The K-Net IP Module is used to connect control units in the **KYO320** range to a LAN. The IP Module may be connected to a LAN using a private IP address or a DHCP address.

The same procedures may be performed using the **KYO320-300-100** application in the **Bentel Security Suite** package, either through the serial port or the network. With a public IP address, it is also possible to manage and monitor the control unit form anywhere in the world, as long as you have access to the Internet.

☞ *Only one PC may be connected to the control unit at a time, via LAN or WAN. Any attempt to connect another PC to the same control unit will fail.*

## Component identification

Throughout the instruction manual, numbers in bold refer to the components identified in Figure 2 (this can be found at the end of the instruction manual). These components are described in the following table:

| P. | Description |
|---|---|
| 1 | Terminal block for connections |
| 2 | Connector for control unit motherboard connection |
| 3 | Microprocessor |
| 4 | Connection speed indicator light (S): off = 10 Mbps; on = 100 Mbps |
| 5 | Connector for LAN connection |
| 6 | YELLOW indicator light for LAN traffic status |
| 7 | GREEN indicator light for LAN detection |
| 8 | IP Module status indicator light (L) |
| 9 | Fixing brackets |
| 10 | IP Module power supply cables |
| 11 | PC-Link cable |
| 12 | IP Module |
| 13 | Control unit motherboard |
| 14 | RS-232 serial port |
| 15 | IP Module screw anchor holes |
| 16 | Control unit base |
| 17 | Secure connector |

### ■ Description of the indicator lights

The IP Module is equipped with the following indicator lights:

**YELLOW light (6)** This indicator light is located on the LAN connector (5) and provides a signal when traffic is detected between the IP Module and the LAN.

**GREEN light (7)** This indicator light is located on the LAN connector (5) and provides a signal when the LAN is detected:
➢ lit = LAN detected; ➢ off = LAN not detected.

**S indicator light (4)** Displays the LAN connection speed:
➢ off = 10 Mbps; ➢ lit = 100 Mbps.

**L indicator light (8)** Displays the events listed in the table below.

| Pr. | Event | Flashes | Description |
|---|---|---|---|
| 0 | Low power | 1 | The IP Module power supply is too low (under 9.5 V) |
| 1 | LAN not detected | 2 | There is no connection between the IP Module and the hub or local router |
| 2 | Account not Valid | 3 | The transmitter Account Code is still set to the default value of 0000FFFFFF |
| 3 | Receiver 1 Absent | 4 | The transmitter is not receiving Receiver Heartbeat commands from the receiver 1 |
| 4 | Control unit not detected | 5 | The transmitter is not communicating with the Control unit via the PC-LINK interface |
| 5 | FTC1 | 6 | The IP Module has not been able to communicate with receiver 1 |
| 6 | Receiver 2 Absent | 7 | The IP Module has not been able to complete the initialisation procedure with receiver 2 |
| 7 | FTC2 | 8 | The IP Module has not been able to communicate with receiver 2 |
| 9 | Remote IP Module programming | 10 | IP Module programming in progress |

If one of the events listed in the above table occurs, the **L** indicator light flashes a number of times to correspond with the value given in the **Flashes** column, with an interval of 1 second.

If several events occur simultaneously, the **L** indicator light will signal the event with the greatest priority (see **Pr.** column in the above table).

The slow blinking (about every 5 sec.) of **L** indicator shows the normal operation of board.

## Installation

The IP Module should be installed to the base of the control unit, as illustrated in Figure 2 (which can be found at the end of the instruction manual). Proceed as follows:

⚠ **Before installing the IP Module, cut the control unit off from its power supply (it should be disconnected from the electricity mains and the batteries). If this is not possible, do not connect the IP Module power supply until the very end of the process: connect terminal [⊥] first, followed by terminal [+V].**

1. Open the control unit as described in the corresponding set of instructions.
2. Fix the IP Module to the base of the control unit using the screws supplied, making sure it is correctly aligned with the screw anchor holes (15).
3. Connect connector (2) on the IP Module to the serial port on the control unit (14) using the PC-Link cable supplied (11).
4. Connect connector (5) to the LAN using an Ethernet cable.

☞ *Use a category 5 (or better) shielded Ethernet cable (STP or FTP).*

5. Where present, connect the [OC] terminal to terminal block (1).
6. Connect terminals [+V] and [⊥] on terminal block (1) to the corresponding terminals [+B4] and [⊥] on the control unit motherboard (13).
7. Reconnect the control unit to the power supply.
8. Program the IP Module as described in the "Programming" paragraph.

## Initial programming

To program the IP Module for the first time, a LAN consisting of the IP Module and the PC must be created and an IP address set for the latter, such as the default IP Module value (192.168.0.101). Proceed as follows:

1. Disconnect the network cable from the PC, if present.
2. Connect the IP Module to the PC using a network cable.
3. Change the IP address of the PC to 192.168.0.XXX (see below).
4. Start the **KYO320-300-100** application in the **Bentel Security Suite** package (see Figure 1).
5. Set the IP address (Option 001) of the IP Module to an address which is valid for the network to which it will be connected.
6. Click-on **Upload** button: make sure that the **Installer code** is 5555.
7. Restore the original IP address of the PC (see below).
8. Reinstall the original wiring and connect the K-Net to the established network.

**Changing the IP address of the PC** For Windows XP or later versions, proceed as follows:

1. Open the network connection properties window.
2. Select the **Internet Protocol (TCP/IP)** tab.
3. Select the **Properties** button: The **Properties – Internet Protocol (TCP/IP)** window will be opened.
4. Enable the option "**Use this IP address**".
5. Enter the value 192.168.0.XXX in the **IP address** box (with XXX other than 101). (for example 192.168.0.10 , the value which should be compatible with the K-Net value). For Windows VISTA
6. Open the window: **Network connection properties, LAN connection, Properties, Internet protocol version 4 (TCP/IPv4), Properties** again, and enter the following **IP address** in the screen that opens: 192.168.0.10.
7. Subnet mask, leave the values suggested by the system. Click OK and close the various windows.

Using the KYO320 control unit keypad, proceed as follows:
a. enable **Maintenance** using the **User code**;
b. enter the **Installer menu** using the **Installer code**, then select **Progr. Panel**, then **Configuration** and finally **Network Board**. Press **ON** and then **Enter** to confirm.

☞ *The K-NET module can be enrolled via keypad only, and once enrolled (**Present**) the Control Panel will no longer be able to communicate via computer (the KYO320 serial port is reserved for KNET)..*

Programming section follows (BSS software rep. 5.5.0).
Once the IP Module programming is complete, restore the IP address of the PC using the same procedure.

# Programming

Using the **KYO320-300-100** application in the **Bentel Security Suite** (rel.5.5.0) package.

This paragraph describes the parameters corresponding to the IP Module. For further information relating to the installation and operation of the **KYO320-300-100** application in the **Bentel Security Suite** package, programming procedures and any other parameters not described in this paragraph, please refer to the control unit INSTRUCTION MANUAL.

The parameters corresponding to the IP Module may be selected and programmed as described below.

The option **Settings-> Net i/f** in the main menu of **KYO320-300-100** software (Bentel Security Suite) allow you to manage **B-NET**. The programming window will open (see Figure 1).

The default address assigned to the K-Net should be entered in the **Remote IP address** text box: 192.168.0.101. At this point it is possible to connect with the **KNET** P.C.B. and view the settings by pressing the **UpLoad** button.

Check the values listed in the "**Manual settings**" mask, and make any necessary adjustments in order to align them with the values of the LAN over which the connection is made. Once the values have been modified, press **Download**.

☞ *Once the following values have been changed: IP_Address, Subnet_Mask and Gateway1IP, the network Board will only respond to the new configurations.*

**DHCP** Another way of connecting to the K-NET is to use the DHCP configuration, which allows an IP address to be assigned to that K-NET automatically. Once DHCP has been ticked, press the RETURN button. To view the address assigned to the K-NET automatically, use the procedure described in the View IP address section. The address viewed using this method will be entered in the Remote IP address box. Finally, press the **Upload** button.

At this point it will be possible to communicate with the K-NET module and the KYO320 control unit.

## ■ Programming Parameters-Network Interface

**Remote IP address** The list of general options available for IP Module setup is as follows:

> **IP_Address** – This value is the static IP address assigned to the K-Net module. Enter the IP address you wish to assign to the IP Module; the network administrator will provide this information alternatively, consult the INSTALLATION MANUAL and carry out the keypad procedure described in order to read the IP address (see Viewing the IP Address paragraph). To program the K-Net module in DHCP mode (dynamic address), the address is 000.000.000.000.
Default value: 192.168.0.101.

> **Encrypt Key1** – If it has been programmed, the IP Module will use this key to encode and decode the packets exchanged with the PC. The encryption key may include between 1 and 32 hexadecimal characters. To disable encryption, enter 0 (zero). If the encryption key does not correspond to that of the IP Module, communication between the PC and the IP Module will NOT be permitted. Enter the encryption key assigned to the IP Module you wish to program. The default setting is 0 (encryption key not enabled).

> **Console Port number** – This is the port which should be used to communicate with the IP Module. Enter the details of the port assigned to the IP Module you wish to program (contact the network administrator).
Default value: 3064.

> **Installer Code** – This code is used to (remotely or locally) program the IP Module via the **KYO320-300-100** application in the **Bentel Security Suite** package. The code should consist of 4 hexadecimal characters. Enter the access code assigned to the IP Module you wish to program.
Default value: 5555.

## Connectivity (see Figure 1)

> **DHCP**- (see Programming paragraph)
> **Manual settings**- (see Programming paragraph)
> **IP_Address** -(see Programming paragraph)
> **SubNet_Mask** – Must equal the subnet mask for the local subnet. For any single subnet, there is only one valid submask; all nodes on the same subnet will use the same subnet mask. The network administrator will provide this information.
Default value: 255.255.0.0.

☞ *If DHCP is enabled then this section will be ignored.*

> **Gateway1 IP** – Enter the IP address of the local gateway which may be used by the IP Module to connect to a PC outside the LAN (WAN).
Default value: 000.000.000.000.

☞ *If DHCP is enabled then this section will be ignored.*

>

> **DLS Port Number** – This is the port which should be used to communicate with the control unit.
Default value: 3062.

**K-Net Options (vedi Figure 1)** These options are used for various applications. Set the values only if required by the network administrator, otherwise leave the default values unchanged.

> **Idle Connection Timeout** – Enter the maximum time period during which no data is transmitted before the connection is terminated.
Default value: 00 (20 seconds).

> **Heartbeat Interval** Once Supervision is enabled (see third Screen, Fig. 1), you will be able to enter a Supervision time value between a minimum of 1 second and 255 seconds, in steps of 1 second.
Default value: 00 (16 seconds)

> **Ethernet Speed** – This option may be used to set the parameters corresponding to the Ethernet interface of the IP Module. The default value is **Automatic**, where the Speed and Duplex values are set automatically by the network. If required, you will find the values to be entered when setting different speeds in the table below. Default value: **Automatic mode**. *

| Speed | Data exchange mode (Duplex) |
|---|---|
| Auto | Auto |
| 10 Mbps | Half |
| 10 Mbps | Full |
| 100 Mbps | Half |
| 100 Mbps | Full |

> **Output polarity** – This can be used to select the operating mode of the IP Module OC output. The values which may be set are as follows:
**Open on trouble**- The output is suspended when a breakdown occurs (default setting).
**Close on trouble**- The output is connected to the earthing system when a breakdown occurs.

> **Output trouble mask** This option can be used to enable and disable indications from the OC output, for several events recognised by the IP Module: **Network absent**, **Panel programming** indication is enabled by default.
Default values: **Network absent**.

> **Led Trouble Mask**– This option is used to enable or disable the indications provided by indicator light **L (8)**, for several events recognised by the IP Module (see paragraph "Description of the indicator lights" for a description of these events). **Network absent**, **Panel programming**;
Default value: Network absent.

## IP Receiver ( see third Screen, Fig. 1)

> **Account Code** – The account number is used by the central station to distinguish between transmitter. There is one account number programmable for the K-Net.
Default value: (0000FFFFFF).

☞ *Account codes 0000FFFFFF, FFFFFFFFFF and 0000000000 are not valid accounts.*

> **Supervision** – To enable Supervision mode, to tick this option.

## Main Receiver

> **IP_Address** – Static IP address for the receiver. Program the IP address of the central station receiver. If a IP receiver is not connected program 0.0.0.0 address.
Default value: 000.000.000.000.

> **Receiver1 Local Port** and **Receiver1 Remote Port** – These values show the ports to communicate with receiver. The same receiver supplies these values.
Default values:3060 (**Receiver1 Local Port**) and 3061 (**Receiver1 Remote Port**).

## Backup receiver

> **Receiver2 IP** – Static IP address for the second receiver. Program the IP address of the second receiver.
Default value: 000.000.000.000.

☞ *The receiver will be used for backup only; not checked.*

> **Receiver2 Local Port** and **Receiver2 Remote Port** – These values represent the ports to be used for communication with the backup receiver.
Default values: 3065 (**Receiver2 Local Port**) and 3066 (**Receiver2 Remote Port**).

☞ *The receiver will be used for backup only; not checked.*

### Receiver 3

> **Receiver3 IP** – This is the IP address assigned to the receiver of the domotics system with which you wish to interact. It is supplied by the receiver itself. Default value: 40000.

**Receiver3 Local Port** and **Receiver3 Remote Port** – These values represent the ports to be used when communicating with the domotics system receiver. They are supplied by the receiver itself.
Default value: 40001.

**Details- Read-only Option** These values cannot be modified. They display information relating to the connected IP Module.

> **MAC Address** – Displays the MAC address of the IP Module: the MAC address is a unique identification number assigned to every IP Module throughout the world.
> **Software Version** – Displays the version of the program running on the IP Module.
> **Boot Version** – Displays the boot version.
> **Current IP Address** – Displays the IP address assigned to the IP Module.
> **Network module** - name of IP module.

### ■ Restore default settings

The default settings may be restored as described below.

☞ When the default settings are restored, it will NO LONGER be possible to communicate with the IP Module and the control unit via the LAN; communication will only be possible using the procedure described in the paragraph "Initial programming".

**Via hardware** Proceed as follows:

1. Disconnect the IP Module from the power supply: disconnect terminal [+V] on terminal block 1.
2. Disconnect the PC-Link cable (11) from connector 2.
3. Short-circuit the first two terminals on connector 2, marked with the symbol

4. Restore the IP Module power supply (reconnect the [+V] terminal on terminal block 1) while keeping the terminals on connector 2 short-circuited, until the **S** indicator light (4) begins to flash.
5. Reconnect the PC-Link cable (11) to connector 2.

Via Software

The software screens (see Fig. 1) have a Default button. Click this button to restore the default settings.

## Viewing the IP Address

**The IP address assigned to the IP Module** If the DHCP is configured, the current IP address of the KNET circuit board may be checked in 2 ways:
-- using a keypad connected to the KYO320 control unit with the network P.C.B. present and configured (see procedure in the Initial programming section), after entering the Installer menu, press the A or B buttons to display the SERIAL PORTS option, followed by the ENTER button. View the IP address and return to the Installer menu by pressing the ESC button. (see also the Kyo320 Installation manual Vol.2 – Keypad procedures);
-for advanced users only: from the control screen of a Windows PC connected to the same network, use the command "PING KNET-xxyyzz",
where xxyyzz are the last 6 digits of the MAC-ADDRESS printed on the KNET label.

☞ A Windows PC may be configured so that it does NOT allow this type of command, meaning this type of procedure will not be available.

☞ The KYO320 software application offers alternative KNET programming options which are not described in the manual; these are intended for future use.

## Technical features

| | |
|---|---|
| Power supply | 9.6 ÷ 27.6 V=== |
| Max. absorption | 250 mA |
| Resting absorption | 50 mA |
| Operating temperature | -5 ÷ +40 °C |
| Dimensions L *H) | 95*65 mm |



**Figure 1** Programming the IP Module using the **KYO320-300-100** application.

### Recycling information

BENTEL SECURITY recommends that customers dispose of their used equipments (panels, detectors, sirens and other devices) in an environmentally sound manner. Potential methods include reuse of parts or whole products and recycling of products, components, and/or materials. For specific information see www.bentelsecurity.com/en/environment.htm
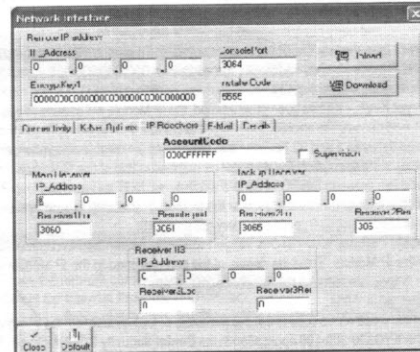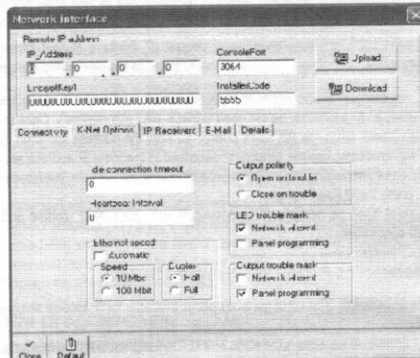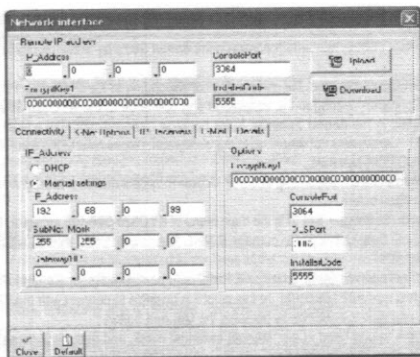
### Waste Electrical and Electronic Equipment Directive (RAEE – WEEE)

In the European Union, this label indicates that this product should NOT be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.
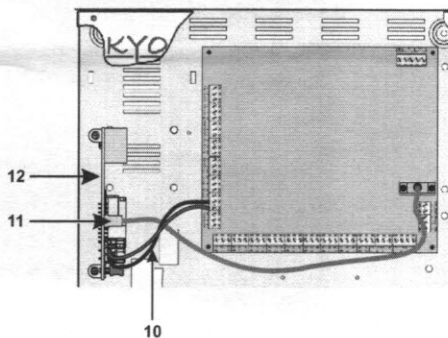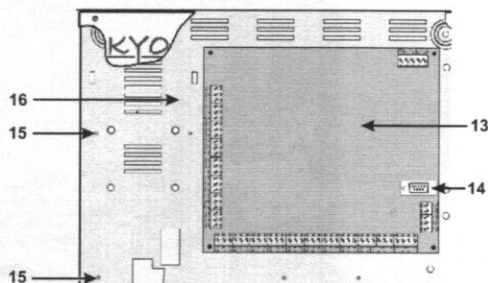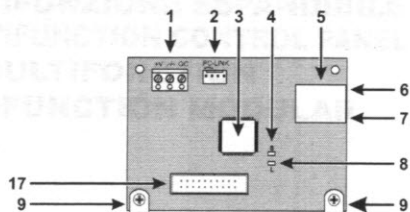For specific information see www.bentelsecurity.com/en/environment.htm

Figura 2  *Identificazione delle parti e installazione del Modulo IP*
*Parts Description and Installation of Modulo IP*
*Identification des composants et installation de Module IP*
*Identificación de los Componentes e instalación del Módulo IP*