TP20-440 - TP20-440 EN

Expandable serial alarm system

EN 50131-1 COMPLIANT

TP20-440
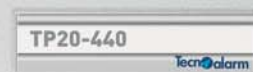
The highest security standards
for a reliable protection
of medium-sized and large
as well as multi-user-systems

Tecnoalarm
Hi-Tech Security Systems

Tecnoalarm RSC® Technology

RSC® (Remote Sensitivity Control) is an exclusive technology developed by Tecnoalarm, thanks to which the central monitoring station (CMS) and the installer can program and control the system completely from a distance. Sophisticated diagnostic tools to allow verify and maintain the smooth functioning of each system component as well as adjust and improve the system's performance.

Programming

SYSTEM CONFIGURATION

Programming of the system's functioning parameters can be made either locally or remotely using the Tecnoalarm programming software. The sophisticated software permits easy setting of the numerous functioning parameters of the system as well as saving of the system configurations for future modifications. It facilitates even the compliance with a maintenance plan, as recommended by the application guide CLC/TS 50131-7. The technician of the installer company can check the settings and functioning of each device from his office and adjust programming. So, at least one of the two annual inspections prescribed by the standards can be carried out remotely.
The diagnostic tools permit easy analysis of the system's functioning and the automatic saving of the corresponding reports.

Zones

ZONE CONFIGURATION

The 12 conventional and the 8 bus inputs of the CPU constitute the basic version of the system. The modular structure as well as the great variety of input expansions permit the expansion to a total of 440 zones which can be freely associated to the hard-wired (conventional or bus) or wireless inputs of the hardware.
The zone programming facilities allow to obtain excellent performances even from traditional detectors but only with the Tecnoalarm RDV® and RSC® detectors the system's potential is tapped. These detectors permit the verification and analysis of the alarms at the very moment they are released, through the specific diagnostic tools.
The limitations of traditional remote management have been overcome and a new concept of interaction has been proposed.
RDV® and RSC® are registered trademarks, RDV® is an international patent.

WIRED 424
LOGIC ZONES 440
WIRELESS 160
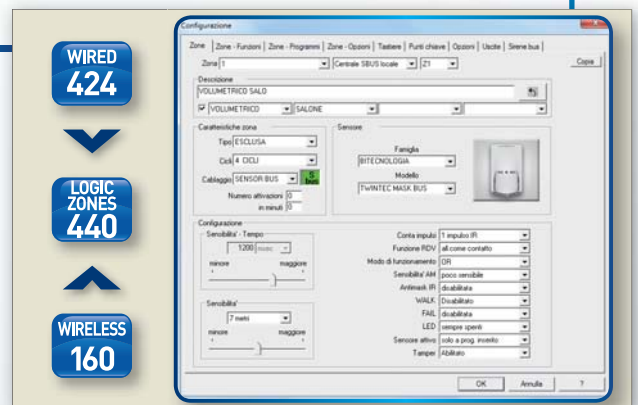
Programs and control units

32 PROGRAMS

The system manages 32 programs for a perfect management of multiuser systems. A wide range of control units is able to satisfy any application requirements. The exclusive touch screen consoles of the series UTS (Universal Touch Screen) are available as a standard console or, for the integration of video surveillance, as a video console.
A plug-in for the loading and management of 32 floor plans or images of your home is available for both.
The Tecnoalarm control units manage access to the system's functions through codes, transponders/RFID cards, wireless keys and finger prints. The programs can also be managed by the app myTecnoalarm.

OPERATING CODES

CODES 1000
KEYS 1000
FINGER PRINTS 96
**32 FLOOR PLANS**
32 ICONS

Time configuration

In order to offer the maximum versatility it is possible to program all the time parameters independently for each of the programs. Access to the functions can be limited through 16 access periods and their activation can be triggered by 64 timers and 10 cyclic timers. The calendar for the management of the automatic functions of the system can be either quadrennial or perpetual.

TIME CONFIGURATION

PROGRAM-SPECIFIC TIME SETTINGS
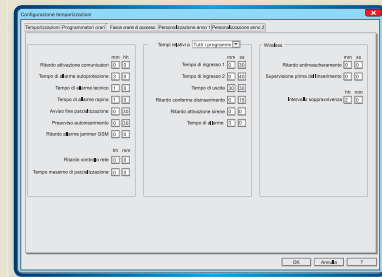
AUTOMATIC FUNCTIONS

ACCESS PERIODS 16
TIMERS 64
CYCLIC TIMERS 10
CALENDAR 4Y/∞

Interaction

The system provides 32 remote controls which allow the user to interact with the system through telephone calls or SMS messages. The remote controls are customizable and permit the management of the system's functions as well as the interaction with external devices such as the heating, air-conditioning, lighting installation etc.

REMOTE CONTROLS

REMOTE CONTROLS 32

SMS **DTMF**

LIGHTS **IRRIGATION** **ROLLER SHUTTERS**
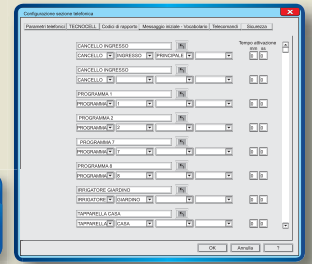
ASYNC@WL wireless expansion

The wireless expansion modules using the protocol ASYNC@WL manage a total of 250 wireless keys and 160 detectors.
The modules are connected to the serial bus which permits the installation in positions guaranteeing a good signal transmission. The wide product range comprises indoor and outdoor detectors as well as barriers capable of offering the ideal solution for all kinds of protection requirements.
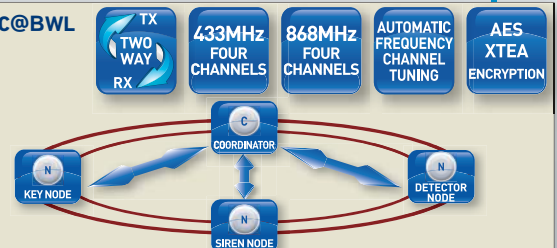
ASYNC@WL

DETECTORS 160
WL KEYS 250

RF MONITOR
BAD
HIGH
LOW
dBm LEVEL
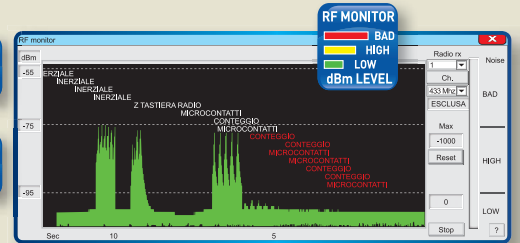
SYNC@BWL wireless expansion

The wireless coordinators using the protocol SYNC@BWL permit the management of bidirectional devices. They coordinate and synchronize the bidirectional data communication with the sirens, wireless keys and detectors. The number of siren nodes connected (max. 6) determines the number of key and detector nodes managed by the system.
The protocol SYNC@BWL guarantees a high level of security and minimizes the risk of collisions.
The RSC® technology, applied to the bidirectional wireless communication, permits remote programming of the functioning parameters of the nodes by PC.

SYNC@BWL

TX TWO WAY RX **433MHz FOUR CHANNELS** **868MHz FOUR CHANNELS** **AUTOMATIC FREQUENCY CHANNEL TUNING** **AES XTEA ENCRYPTION**

COORDINATOR
KEY NODE **DETECTOR NODE** **SIREN NODE**

COORDINATOR	1						
SIREN NODE	0	1	2	3	4	5	6
DETECTOR AND KEY NODE	133	126	119	112	105	98	91

Event log

The event log contains all the events concerning the system's functioning, i.e. the alarms, the diagnostics and the changes of status. A total of 32000 events can be recorded, in reverse chronological order, with indication of date and time.
For each event, detailed information is given on the zones, programs and remote controls involved, identified by a number or a description, as well as the telephone calls made. The installer can download the event log at any time using the Tecnoalarm software and extract the necessary information to verify the system's smooth functioning.

EVENT LOG

EVENT BUFFER CAPACITY 32.000

**INQUIRE** **ALARM GRAPH** **DOWNLOAD** **PRINT** **SAVE**
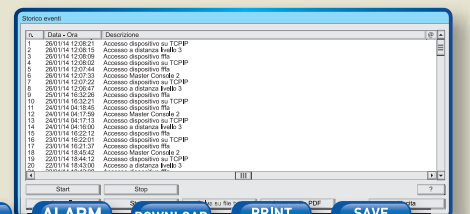
Video surveillance

The system is compatible with video surveillance products of the ranges Videoalarm CCTV, HD and IP. Management of the surveillance cameras is implemented by means of specific video consoles. The consoles UTS V4 and UTS V8 manage respectively 4 or 8 standard CCTV surveillance cameras connected through active or passive Baluns and standard UTP cables. The UTS VHD8 console manages 4 HD surveillance cameras with 2MP resolution, connected through a standard UTP cable.
The UTS E console uses IP connections for managing the surveillance cameras. The implementation of the Videoalarm IP products requires the installation of the Ethernet interface ESP LAN on the control panel or the interconnection of the PoE switch TECNOSWITCH.
Viewing of the live streams coming from the surveillance cameras can be associated to alarm events, the arming/disarming of programs or the activation/deactivation of remote controls.

Advanced programming

The advanced programming is a plug-in of the firmware of the system which permits the customization of the system's resources beyond the standard level as well as the integration of home automation functions. The conventional functionality of the inputs, outputs, channels, remote controls etc. is redefined through a series of actions, associated to the events. Expansion modules with relay outputs can be connected via serial bus to the system. The possibility of cloning their address allows to control different devices installed throughout the installation by excitation of only one relay.

ACTIONS 2048
TIMERS 512
COUNTERS 256
PHONE BOOK 48
LED SIGNALING PANELS 16
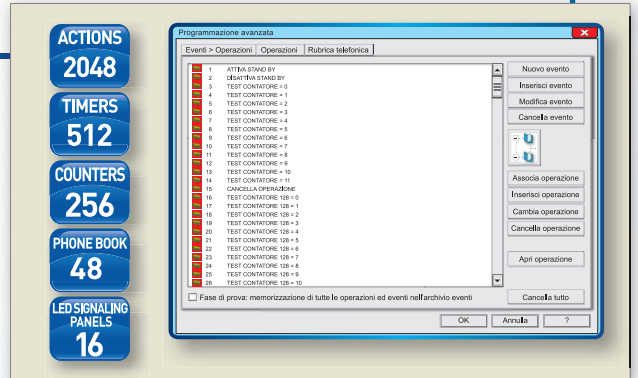
Alarm notification vectors

The integrated telephone interface provides 8 telephone channels to notify the 1097 transmittable events to the users and the CMS.
The on board PSTN telephone interface can be integrated by an internal GSM-GPRS interface and/or an internal Ethernet interface.
The telephone vectors, depending on their characteristics, use several protocols, also encrypted, to communicate in an appropriate and safe way with the user.

COMMUNICATION DEVICE   **ENCRYPTION KEYS**

PSTN | GSM-GPRS | IP | GSM-EXT

PASSPHRASE | AES 128 BIT | AES 256 BIT

VOICE | SMS | FSK | RING | DTMF | DATA | EMAIL
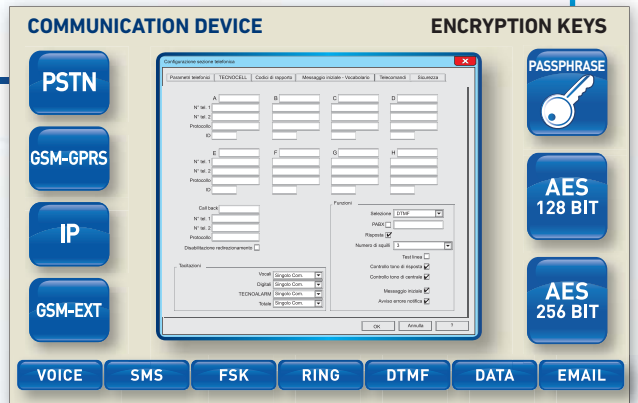
VECTORS									
Vectors	**Device**	**TCS**	**DDNS**	**MAIL**	**APP**	**RDV®**	**SMS**	**Remote controls**	**Remote management**	**Monitoring**
PSTN	On board					✓		✓	TECNOMODEM	✓
GSM-GPRS*	ESP GSM-GPRS					✓	✓	✓	TCP/IP	✓
	ESP GSM-GPRS 3G	✓			via TCS	✓	✓	✓	TCP/IP	✓
	ESP GSM LINK TECNOCELL 3	✓			via TCS	✓	✓	✓	TCP/IP	✓
GSM-EXT*	TECNOCELL 3								TECNOMODEM	✓
IP*	ESP LAN	✓	✓	✓	✓				TCP/IP	✓

* Optional vector

Autonomy				
TP20-440 EN EN 50131-1 COMPLIANT	**Batteries: 2x 12V/18Ah**			
	Autonomy required	**CPU self consumption**	**Recharge current**	**Load current**
Security grade 2 — Non-remotely managed system	12 hours	190mA max.	850mA*	2810mA
Security grade 3 — Remotely managed system	30 hours	190mA max.	850mA*	1010mA
* Charging time: approx. 20 hours - Required charging time: security grade 3 - 80% in 24 hours, security grade 2 - 80% in 72 hours				

The system integrates the necessary functions for the automatic management of the Tecnoalarm telematic services: DDNS TECNOALARM, SNTP and MAIL SERVER TENOALARM.
These services are managed automatically by a dedicated server and have the aim to simplify and protect the management of the connection of the systems to the Ethernet.

DDNS TECNOALARM
The DDNS TECNOALARM service, in order to be able to reach the control panel at any time, automatically records the name and the IP address of the control panel on the Tecnoalarm server. Whenever the control panel (Client) registers that its IP address has changed, it automatically communicates the new address to the server which updates the registered IP address and transmits the information to the DNS servers on the internet.

MAIL SERVER TECNOALARM
The system is equipped with a Mailer Client for the transmission of emails. The Mail Server Tecnoalarm provides a hard-programmed account for the burglar alarm system, by which it transmits the emails received from the system to a total of 8 recipients. The emails contain the time of occurrence of the events as well as the system status.

TECNOALARM CONNECT SERVICE
TCS is a platform that puts the Tecnoalarm systems into communication via internet with the software applications made for both, technical staff and final customers. TCS arranges the transfer of push notifications towards the app myTecnoalarm.
For technical management, TCS uses direct addressing to route the Tecnoalarm software towards the alarm system.

SNTP
The SNTP service allows the control panel to synchronize the internal clock with an NTP server which uses the universal coordinated time (UTC).

myTecnoalarm
The app for iPhone and Android allows to interact with the Tecnoalarm burglar alarm systems in a natural and intuitive way. The user can manage the system's programs and remote controls, check their status and query the stored events.
Thanks to the new telematic service TCS, the app myTecnoalarm can receive push notifications from the controlled alarm system.
The communication between the app and the system is established in real time on demand.
It is protected by the use of an encrypted protocol and two security parameters, i.e. a passphrase and an access code.

Management of the programs
Icons simplify the identification of the programs and the program status check. Arming, disarming and partset becomes rapid and intuitive.

Management of the remote controls
The app permits an easy and intuitive management of the home automation.

Event log
The user can download the event log of the system and scroll the events.

Cameras
The menu provides easy and effective interaction with the Videoalarm IP cameras guaranteeing the most complete synergy of detection and video surveillance.

Zones
The menu allows to check the status of the protected zones and exclude zones in a simple and fast way.

Settings
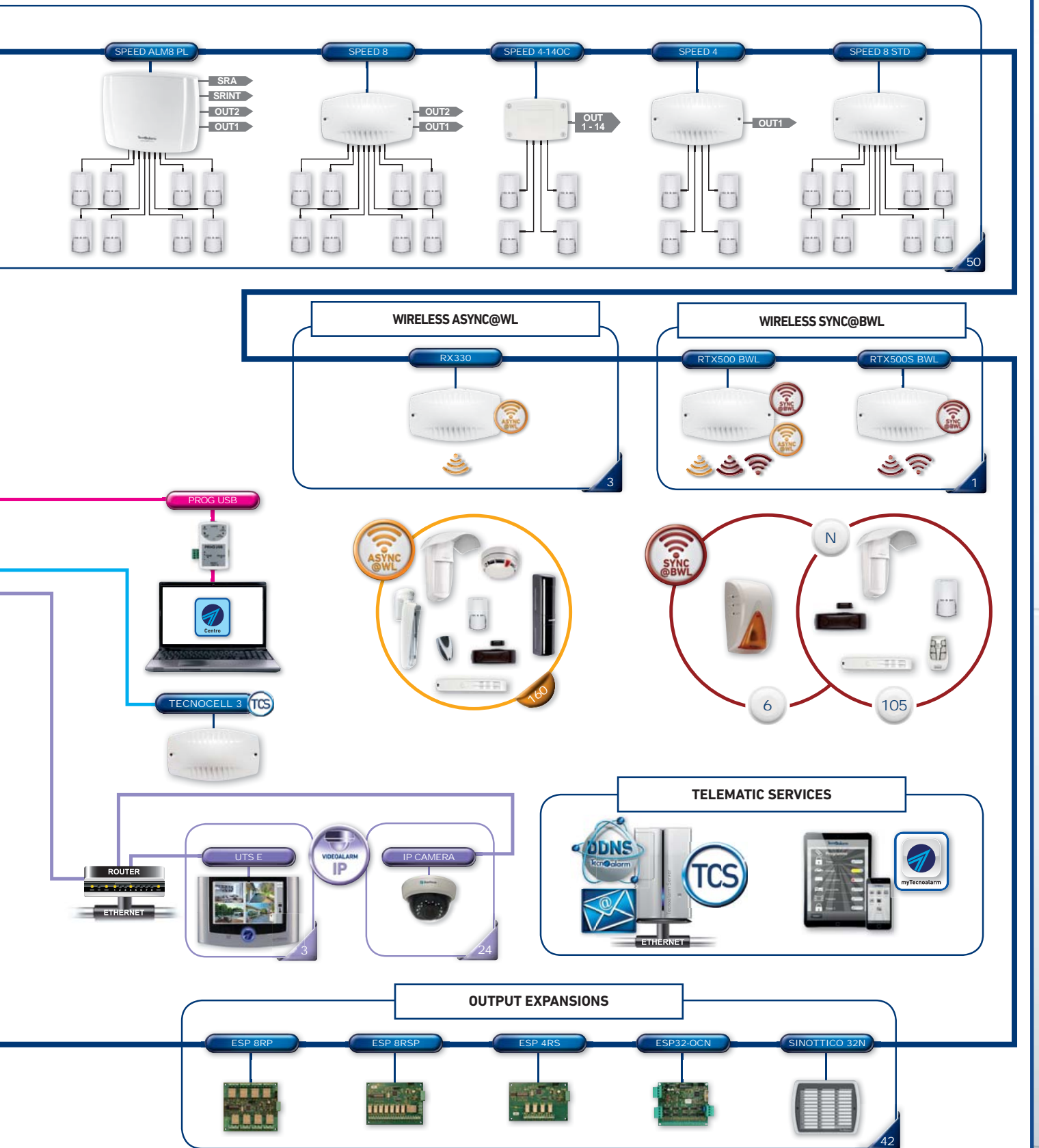This menu allows the user to customize the icons and program an alphanumeric description of the programs and remote controls.

Video alarm

	Cameras				Cameras	Recording	Viewing
HD	UTS VHD8	4		**IP**	UTS E	24	8

	Cameras	Viewing
CCTV	UTS V4	4
	UTS V8	8

POWER SUPPLIES INPUT EXPANSIONS

TAPS-8 BUS	SPEED 4-8 P3A	SPEED ALM8 PLUS	SPEED 8 PLUS	SPEED 4 PLUS
SRA	SRA	SRA		
SRINT	SRINT	SRINT		
- OUT1	OUT2	OUT2	OUT2	
- OUT2	OUT1	OUT1	OUT1	OUT1
SIREN BUS	SIREN BUS	SIREN BUS		

CONSOLES

LCDPROX1   LCD300/S   UTS 4.3 PROX

| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |

SERIAL BUS MUX

- SRA
- SRINT
- - OUT1
- - OUT2
- + OUT3
- + OUT4
- - OFF

UTS VHD8   UTS V4 - UTS V8   UTS C   **SERIAL BUS**

SIREN BUS

SENSOR BUS

PROG INTERFACE

C	ESP GSM GPRS 3G	TCS
	ESP GSM GPRS	
	ESP GSM LINK	
B	ESP LAN	TCS

TP20-440

| A | ESP OUT60C |
| | ESP 4IN |

HD   CCTV   **32**

8

BUS SIRENS

SAEL 2010 BUS   SIRTEC BUS

24

TELEPHONE COMMUNICATOR

AUXILIARY CONTROL UNITS

TECNOCELL 3

TP SKN   PROX K6N   DIGITEX   APR CARD N   APR FINGER N   APR FINGER-CARD N

1

32

Number of connectable devices per type

Number of managed ASYNC@WL devices

INPUTS	CPU	ESP 4IN	SPEED 8 STD	SPEED 4	SPEED 4-14OC	SPEED 8	SPEED ALM8 PL	SPEED 4 PLUS	SPEED 8 PLUS	SPEED ALM8 PLUS	SPEED 4-8 P3A
CONVENTIONAL*	12	4	8	4	4	8	8	4	-	-	4**
ZONE BUS	-		-								
SENSOR BUS	8	-	-	-	-	-	-	4	8	8	8

*The following contact types can be programmed: NC (normally closed), NO (normally open), BIL (end-of-line resistor), B24 (double end-of-line resistor). The following filters can be programmed: time, pulse count or inertia.
** The 4 conventional inputs are only available as an alternative to 4 Sensor Bus inputs (max. 8 inputs managed)

SPEED ALM8 PL

SRA
SRINT
OUT2
OUT1

SPEED 8

OUT2
OUT1

SPEED 4-14OC

OUT 1 - 14

SPEED 4

OUT1

SPEED 8 STD

50

WIRELESS ASYNC@WL

RX330

3

WIRELESS SYNC@BWL

RTX500 BWL

RTX500S BWL

1

PROG USB

Centro

ASYNC @WL

160

SYNC @BWL

N

6

105

TECNOCELL 3 TCS

TELEMATIC SERVICES

DDNS
Tecnoalarm

TCS

myTecnoalarm

ETHERNET

ROUTER

ETHERNET

UTS E

VIDEOALARM IP

IP CAMERA

3

24

OUTPUT EXPANSIONS

ESP 8RP

ESP 8RSP

ESP 4RS

ESP32-OCN

SINOTTICO 32N

42

N Number of SYNC@BWL nodes managed by RTX500S BWL and RTX500 BWL
The number depends on the number of connected sirens.

Internal expansions and interfaces

ESP 4IN

Approved for certified systems

ZONE BUS DETECTORS **4 CONVENTIONAL DETECTORS**

Mounting position	A	B	C	

Expansion module with 4 parallel inputs for the connection of conventional detectors and Zone Bus detectors.

Item no. F127ESP4IN

ESP OUT6OC

Approved for certified systems

6 OUTPUTS

Mounting position	A	B	C	

Expansion module with 6 open-collector outputs which can be freely associated to the logic outputs of the system.

Item no. F127ESPOUT6OC

ESP LAN

Approved for certified systems

TCS **DDNS Tecnoalarm** **IP**

Mounting position	A	B	C	

Ethernet-Interface
The interface implements the IP vector and permits remote management with TCP/IP.

Item no. F127ESPLAN

ESP GSM-GPRS

Approved for certified systems

2G GSM-GPRS

Mounting position	A	B	C	

Interface for the connection of the control panel with the GSM or GSM-GPRS network
The interface allows to use the GSM or 2G mobile telephone network as communication vector.

Item no. F127ESPGSMGPRS

ESP GSM-GPRS 3G

Approved for certified systems

TCS **UMTS** **3G GSM-GPRS**

Mounting position	A	B	C	

Interface for the connection of the control panel to the GSM or GSM-GPRS network
The interface allows to use the GSM, 2G or 3G mobile telephone network as a communication vector. It is fit for the use with the remote management and TCP/IP software.

Item no. F127ESPGSMGPRS3

ESP GSM LINK

GSM LINK INTERFACE

Mounting position	A	B	C	

Interface for the connection of the TECNOCELL 3 telephone communicator via the serial bus RS422
The TECNOCELL 3 will be used in the internal GSM mode.

Item no. F127ESPGSMLINK

Mounting positions
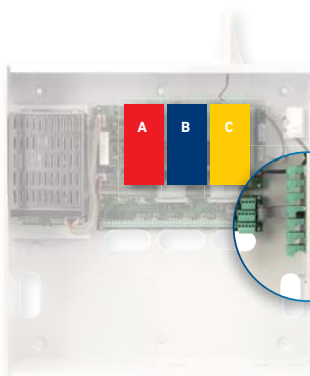
SERIAL BUS MUX
The SERIAL BUS MUX module, standard equipment for the TP20-440 system, permits the distribution of the devices connected via RS485 serial bus over several terminals. It is possible to wire one branch line of the serial bus to each terminal (each branch line may not exceed a maximum length of 25 meters).

Performance level

During the drafting of the project of a burglar alarm system, it is necessary to thoroughly analyze the risks such as the location of the installation, the environmental risk, the possible interferences, the values to be protected and the security requirements of the customer.

According to the assessed risks, the European standards define up to 4 performance levels, and for each of them the compulsory protection facilities.

Protection level

The standards also define **three protection levels**:
First level   Protection of the sensible areas in the indoors (bedroom, living room etc.)
Second level Outdoor protection of the outside of the building (doors and windows)
Third level   Perimeter protection of the estate (boundary wall or fence)

The three levels of protection

TWINTEC BUS

Indoor protection through dual technology (passive infrared + microwave)
A sophisticated digital processing of the detected signals and the programmable detection logic (AD/OR/WALK), which can be combined with the RDV® function, allows a positive verification of the alarm.
The TWINTEC MASK BUS model also provides an antimasking control.
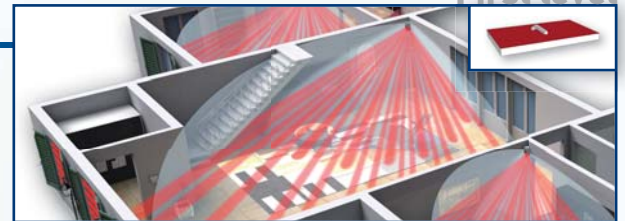
First level

DUALRED BUS

Protection of the in-and-out-openings
The detector is composed of a double passive infrared element and an integrated magnetic contact. The technologies can be analyzed in combination or singularly (detection logic AND/OR). The detector also provides an antimasking control.

Second level

WINBEAM/S - DOORBEAM/S

Protection of the in-and-out-openings through active infrared barriers
The barriers have been developed for the installation in protected outdoor areas and are resistant to mechanical stress and weather.
A sophisticated digital synchronism protects them against undesired reflections and other interferences.
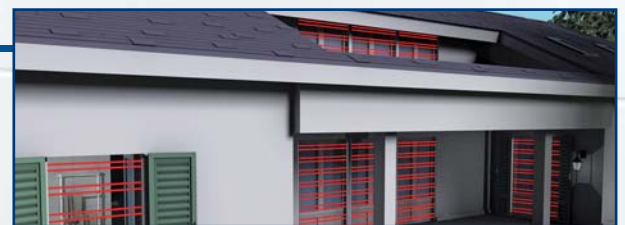
GLOBAL SPACE BUS

Wide angle protection for outdoor use
The detector features a mult-point technology: triple infrared and microwave, providing a very tight protection, made of 43 infrared beams distributed on 5 levels, combined with the microwave beam.
The programmable AND detection logic permits the adaptation of the detector's functioning to the characteristics of the area to be protected.
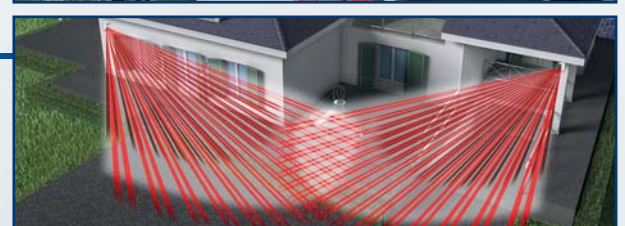
BEAMTOWER

Perimeter protection through active infrared barriers
The surprising versatility of the barrier, mounted in self-supporting self-protected aluminum columns, allows to build, in addition to the classic barrier protection with a single side, complex protections of large areas, such as solar parks, with several sides and open and closed perimeter configurations.

Third level
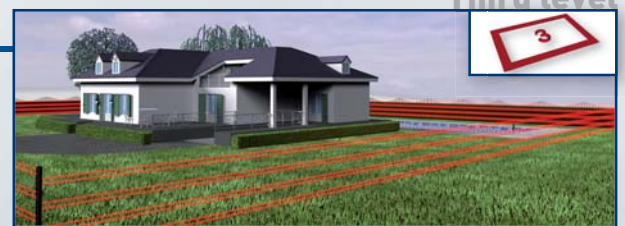
EXPLORER BUS

Perimeter protection through microwave barriers
The barrier projects a beam of electromagnetic waves along the side to protect, which constitutes a sensitive barrier to intrusion attempts.
It is perfect for the protection of high security facilities such as industrial plants, solar parks, warehouses, airports. The barrier is highly immune against light sources and RFI/EMI interferences.

Serial expansions

CONSOLES	UTS 4.3 PROX	UTS V8	UTS VHD8	UTS C	LCDPROX1	LCD300/S
CODES	✓	✓	✓	✓	✓	✓
TRANSPONDERS	✓				✓	
PROGRAMS	15	32	32	32	8	8
VOICE SYNTHESIS	✓	✓	✓	✓		✓
SCREEN	TFT 4,3" capacitive touch screen	TFT 7" capacitive touch screen	TFT 7" capacitive touch screen	TFT 7" capacitive touch screen	LCD graphic display	LCD 2x16 characters
FLOOR PLANS		Optional*	Optional*	Optional*		
USB PORT		✓	✓	✓		
VIDEO INPUTS		8	4			
ITEM NO.	F127UTS43P	F127UTSV8	F127UTSV8HD	F127UTSC	F127LCDPROX1	F127LCD300S

* Optional software plug-in for the management of 32 floor plans

BUS SIRENS	SIRTEC BUS	SAEL 2010 BUS	SAEL 2010PRO BUS
PROGRAMS	32	32	32
ALARM MODES	Programmable	Programmable	Programmable
ANTI-FOAM		✓	✓
ANTI-DRILLING			✓
CASING	ABS	ASA	ASA + Al
ITEM NO.	F105SIRTECBUS	F105S2010BUSBI	F105S2010PBUSAL

GSM 3G TELEPHONE COMMUNICATOR	TECNOCELL 3
CONNECTION INTERNAL GSM MODE	RS422
CONNECTION EXTERNAL GSM MODE	RS485
CASING	ABS
ITEM NO.	F104TECNOCELL3

INPUT EXPANSIONS	TAPS-8 BUS	SPEED 4-8 P3A	SPEED ALM8 PLUS	SPEED 8 PLUS	SPEED 4 PLUS
POWER SUPPLY	8A	3A	1.8A		
INPUTS		4 conventional/ Zone Bus + 8 Bus	8 Bus	8 Bus	4 conventional/ Zone Bus + 4 Bus
OUTPUTS	4	4	4	2	1
SENSOR BUS		1 port	4 ports	1 port	1 port
SIREN BUS	1 port	1 port	1 port		
CASING	Metal	Metal	ABS	Optional	Optional
ITEM NO.	F107TAPS-8BUS	F101SPEED48P3A	F101SPEALM8PLUS	F101SPEED8PLUS	F101SPEED4PLUS

AUXILIARY CONTROL UNITS	APR FINGER-CARD N	APR FINGER N	APR CARD N	DIGITEX	PROX K6N	TP SKN
FINGER PRINTS	✓	✓				
RFID	✓		✓			
TRANSPONDERS					✓	✓
CODE				✓		
PROGRAMS	3	3	3	4	6	3
MEMORY	On board (96 finger prints)	On board (96 finger prints)				
ITEM NO.	F103APRFINCARBN	F103APRFINNN	F103APRCARDNN	F103DIGITEX	F127PROXK6N	F127TP-SKN

WIRELESS EXPANSIONS	RX330	RTX500 BWL	RTX500S BWL
FUNCTION	Receiver	Coordinator	Coordinator
PROTOCOLS	ASYNC@WL	SYNC@BWL/ASYNC@WL	SYNC@BWL
FREQUENCY	433MHz/868MHz 1 channel	433MHz/868MHz 16 channels	433MHz/868MHz 4 channels
ITEM NO.	F102RX330	F102RTX500	F102RTX500S

OUTPUT EXPANSIONS	ESP 8RP	ESP 8RSP	ESP 4RS	ESP32-OCN	SINOTTICO 32N
OUTPUTS	8x 4A relays	7x 0.3A relays + 1x 4A relay	4x 0.3A relays	32 open collectors	32 programmable LED
CASING	Optional	Optional	Optional	Optional	ABS
ITEM NO.	F127ESP8RP	F127ESP8RSP	F127ESP4RS	F127ESP32OCN	F127SINOTTICON

SPEED ALM8 PL	SPEED 8	SPEED 4-14OC	SPEED 4	SPEED 8 STD
1.8A				
8 conventional/ Zone Bus	8 conventional/ Zone Bus	4 conventional	4 conventional/ Zone Bus	8 conventional
4	2	14	1	
ABS	Optional	Optional	Optional	Optional
F101SPEEDALM8PL	F101SPEED8	F101SPEED414OC	F101SPEED4	F101SPEED8STD

TP20-440 - Technical and functional specifications

Zones		
	Total logic zones	440
	CPU hard-wired zones	12 conventional
		8 Sensor Bus
	Total hard-wired zones	424
	Total wireless zones	160

Outputs		
	CPU outputs	6 programmable
	Sirens	32

System features		
	RS485 serial bus	3
	Voice synthesis	✓
	Event buffer capacity	32,000 events

Programs and access management		
	Programs	32
	Codes	1,000
	Finger prints	96
	Transponders/RFID	1,000
	Wireless keys	250

Automation		
	Timers	64
	Access periods	16
	Calendar	Quadrennial or perpetual
	Remote controls	32
	Cyclic timers	10
	Test call with TCP/IP	✓

Telephone section		
	Channels	8
	PSTN vector	On-board
	GSM 2G vector (optional)	ESP GSM-GPRS
	GSM 3G vector (optional)	ESP GSM-GPRS 3G
	GSM vector (optional)	TECNOCELL 3
	IP vector (optional)	ESP LAN
	Transmittable events	1,097
	Telephone numbers/ IP addresses	2 per channel (max. 24 digits)
	Call event queue	96
	Protocols	203

Telematic services		
	DDNS Tecnoalarm	✓
	SNTP	✓
	Mail Server Tecnoalarm	✓
	TCS	✓

Videoalarm		
	CCTV	✓
	IP	✓
	HD	✓

Serial expansions		
	Hard-wired input expansions	50
	Wireless expansions	3
	Consoles	32
	Auxiliary control units	32
	Output expansions	42
	GSM telephone communicator	1
	Bus sirens	24
	Wireless sirens	6
	Wireless consoles	6 (ASYNC@WL)

Advanced programming		
	Actions	2,048
	Timers	512
	Counters	256
	Telephone index	48 numbers
	Reserved output expansions	16

Accessory management		
	App (iPhone + Android)	✓
	Tecno out protocol	Optional
	Printer management	✓

Electrical specifications		
	Operating voltage	230V AC +/- 10% 50Hz
	CPU board consumption	190mA @ 13.8V DC
	Power supply	8A @ 14.4VDC
	Batteries	2x 12V/18Ah

Physical specifications		
	Environmental class	II
	Casing	Metal
	Dimensions (L x H x D) (w/o antenna)	455 x 445 x 115mm
	Antenna height	90mm
	Weight (w/o battery)	7.8kg
	Operating temperature	-10°C...+55°C
	Humidity (non-condensing)	93%

Conformity		
	Standards	EN 50131-1 EN 50131-3 EN 50136-2-1
	Security grade	3
	Notified body	IMQ

MODELS				PSTN	3G GSM-GPRS	IP	ADVANCED CONFIGURATION	TECNO OUT	POWER SUPPLY	METAL BOX
Model	Item no.									
TP20-440	F101T440-UK			✓	Optional	Optional	✓	Optional	8A	✓
TP20-440 EN	F101T440EN-UK	Security grade 3		✓	Optional	Optional	✓	Optional	8A	✓

The product features can be subject to change without notice.

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HI-TECHNOLOGY & DESIGN
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