The future of professional mobile communication

TETRA Secury System funktel TSS

The TETRA-based radio alarm system with telephony integration and precise localisation

TETRA SECURY SYSTEM TSS

funktel TSS: New standards for your security and information

Security & Communication

With its head office in Salzgitter, funktel GmbH is a leading manufacturer of professional security and communication solutions based on DECT, GSM and TETRA for industry, public utilities and authorities.

We are specialists in personal emergency signal systems with mature know-how in developing and producing intrinsically safe devices that also satisfy the directives of the Employer's Liability Insurance Association (of Germany).

As one of the largest manufacturers of handsets for professional and industrial applications, our facility in Salzgitter develops and produces mobile terminals and certified personal emergency signal systems based on DECT and TETRA.

funktel TETRA SECURY SYSTEM TSS

Professional communications solutions with integrated personal alarm signal and messaging functionality –efficient, flexible and modular.

■ The TETRA Secury system funktel TSS is a modern communications platform with integrated and situation-orientated security systems – conforming to standards, certified and highly modular.

The flexibility of the system allows it to be adapted to suit the demands of the real world and it can grow as you require. It can easily be integrated with existing communications, security and IT infrastructure – including, of course, the DECT Secury system funktel DSS.

The TETRA Secury System funktel TSS offers an optimised system consisting of a control centre and mobile Personal Emergency Signal handsets that is suitable for use in various real-life situations. Professional radio communication with a high standard of security is combined with standard telephony functions in a single system.

Typical applications include:

- Extensive industrial and logistics facilities and systems
- Plant and property security
- Energy supply companies
- Water and sewage works
- Authorities and organisations with a security function
- Local authorities
- Justice

With more than 40 years' experience in the development of systems for inter-office private communication networks, funktel has a unique background in optimal design and manufacturing of modern radio technologies.

Personal security with funktel TSS: protecting life and limb.

Alarm recognition, signalling, transmission and assistance

The funktel TSS TETRA Secury System offers optimal personal security with specific functions as well as sensors for manual and automatic alarm triggering integrated with the radio sets.

For this purpose a TETRA communication system is supplemented with the funktel Secury application (TSS) and furthermore extended with inductive localisation beacons—allowing room and floor-accurate localisation of persons seeking help. If and when required the system can be adapted to specific customer needs.

Listening in and voice communication with personnel affected by the alarm can be established and controlled from the control point. In addition voice communication can be established with other Secury and telephone users at any time.

Integrated special functions enable the funktel FT4 S series handsets to deal with any emergency:

- Integrated sensors for localisation and alarms
- Automatic alarm modes—such as position, no-movement, and time-dependent alarms
- Automatic loss alarm (by means of a tear-away switch)
- Manual alarms via separate, easy-to-reach emergency and warning keys
- Area and room-specific localisation
- Immediate reporting of an alarm to the control point
- Transmission of alarms to other mobile devices (e.g. personnel in the area)

Every alarm report, together with localisation data, is sent to the central server and the control point respectively, and can be indicated on a plan of the building. In this way, assistance can be given without delay and monitoring of activities can be guaranteed. The entire event is comprehensively documented for subsequent evaluation.

Greatest flexibility for optimal security

Our Secury application provides a comprehensive, central alarm management system on a client-server basis. In addition to automatic, precise logging the funktel TSS at all times offers an optimal overview of reporting sequences, room and floor-specific localisation of personnel and the direction of assistance. Alarm monitoring can also be presented as an overlay on building plans —with video support.

The technical foundation of the funktel TETRA Security System (TSS) is an open or self-contained TETRA communication system, which flexibly combines speech and data communication (e.g. messaging).

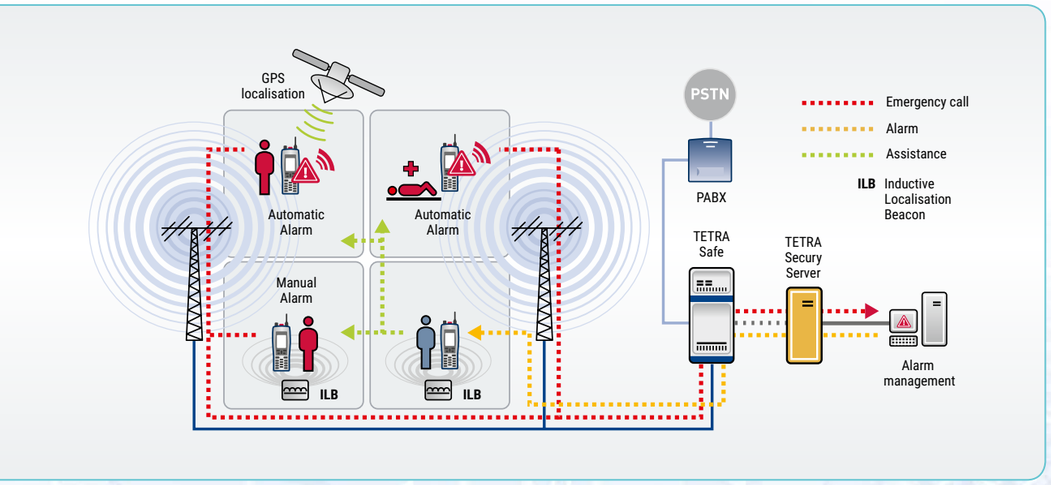
Through optimal scalability and by means of efficient transmitter and antenna technology, radio coverage can be adapted to the greatest possible range of situations. In this way, reliable radio service is also available in challenging areas, such as:

- Innermost areas of buildings
- Complex industrial plants
- Halls and tunnels
- Basements and engine rooms
- Areas in which there is an explosion risk
- Large open areas

In addition to outstanding speech and group communication and the ability to transmit text messages offered by the TETRA radio standard, the communication system is further enhanced by additional performance features and Secury functionality, such as:

- Comprehensive alarm functions with alarm transmission
- Room-specific and floor-specific localisation
- Audio monitoring (eavesdropping) of persons in danger
- Guard monitoring
- Integration of PBXs and gateways to other communication systems
- Linking with video systems
- Integration of machines and relays in the alarm sequence or for automatic status reporting
- Integration of the funktel DSS DECT Secury System

Overview of the funktel TSS system



■ Communication between the alarm control point and the relevant funktel FT4 S personal emergency signal handsets is based on standard TETRA call modes. In this way, for example, the alarm functions make use of short data messages transmitted and exchanged via the Secury Server, complemented by further messaging functions (professional messaging).

TETRA System functions

- Optimal radio coverage with minimal installation cost
- Very rapid call establishment (< 300 ms)
- High speech quality with good speech recognition
- High user-capacity by means of time division multiplex (4 channels per frequency)
- Outstanding, resource-efficient group communication for operational control
- High level of communication security thanks to TETRA codec and additional encryption possibilities
- Direct communication between handsets as additional fallback solution
- Communication with PABX and the public telephone network
- Guaranteed delivery of short data messages, even to busy users

Secury functions

- Alarm control point with one or more alarm work stations for the management of telephony and messaging functions
- Alarm work stations for the management of telephony and messaging functions
- Continually updated room, area and floor-specific alarm indication on site plans
- Automatic, immediate relaying of an alarm to other handsets, ensuring rapid assistance
- Remote control of announcement and eavesdropping functions, for the fastest possible evaluation of a hazardous situation without any action being required by the person sounding the alarm
- Monitoring of assistance with logging
- Automatic switching of machines and relays
- Manual switching of relays from the control point, in order to operate external signalling systems (e.g. sirens etc.)
- Self-monitoring of the system functions with automatic log-on and log-off procedure for the FT4 S handsets
- Standardised interfaces for connection with other existing alarm systems
- Video feeds from CCTV cameras possible
- BG-certification: BGR139 / DIN V VDE V 0825-1

TETRA Secury Server and control point software

TETRA Secury Server

■ The TETRA Secury Server is the centre point of the systems: a professional PC server, designed for continuous operation using the Secury user-software.

All alarms are evaluated by the TETRA Secury Server and forwarded to the webnet client. Simultaneously, the complete alarm report is automatically forwarded to TETRA handsets and pagers. It is also forwarded as an e-mail, sms and if necessary as a command to external alarm systems, such as fire alarms or sirens. As an option, video systems or the special "Warden's Round Control and Logging System" software package can be incorporated.

If desired, the Secury-Software can be optimised for the requirements of the specific application by means of software modifications, so that complex alarm situations can always be clearly and simply shown within the larger system.

Additional features:

- Multi-user capability by means of the client/server concept
- Automatic functional control of all logged-in handsets
- Monitoring of emergency dispatching
- Execution of webnet messaging
- Contact reporting and relay control

Secury Client and control point software webnet classic / webnet2

■ The webnet control centre software enables highly efficient alarm management with intuitive user-prompting. To ensure correct alarm response, the operator in the control centre is guided step-by-step by the system.

Even the standard version of webnet classic enables the ergonomic handling of alarms. With the optional webnet2 upgrade version, the user receives—in addition to expanded capabilities—standardised interfaces with superordinated management systems.

The funktel TSS–funktel DSS combination

■ The system architecture of the funktel DSS (DECT) and funktel TSS (TETRA) Secury systems allows the communication systems to be combined—while retaining a common alerting platform. In this way, an existing DECT Secury system funktel DSS can easily be extended by a TETRA Secury system funktel TSS—and vice-versa.

Also the conception and realisation of a combined TSS-DSS-Secury system is possible without problems. This way the benefits of TETRA and DECT communication are combined in a single system—while retaining full Secury functionalities.

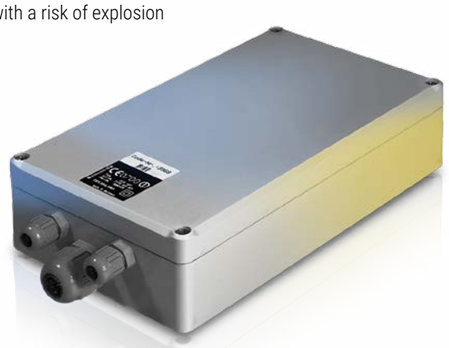
Localisation and alarm triggering

The funktel TSS enables a person in distress to be precisely localised by means of inductive location beacons (ILBs). The exact locality of the alarm can thus be indicated to the client workstations on the network by means of a layout display.

- Precise localisation of the person in distress
- Area and floor-specific indication of the locality by means of layout displays and floor plans
- Networked client workstations
- Automatic alarm forwarding to other mobile sets
- Silent alarm and hostage function
- Tracking of alarm locality, eavesdropping and shutdown function
- Support of all TETRA performance features for efficient individual and group communication
- External supplementary alarms, switchable by means of floating contacts or programmable interfaces
- Switching of fire alarm, process control and video systems

Inductive Localisation Beacon (ILB)

- Low frequency, attentuation-free localisation technique using a purely magnetic coupling of transmitter and receiver coils (induction)
- Localisation frequency: 65 kHz
- Localisation range precisely adjustable (0,7 – 6 m)
- Programming of the range and addresses possible without opening the casings, even after installation
- Direction of movement determined by connecting separate antennas
- Demarcation of larger localisation areas by adding external loop antennas installed in the ground
- Add-on module offers function monitoring with alarm
- Sabotage-proof installation with sabotage alarm
- Suitable for outdoor and flush-mounting (Protection Class IP 65, temperature range -15 to +55 °C
- ATEX versions available for use in areas with a risk of explosion



Integration in existing TETRA systems

TSS connection via TMO Modem or application interface—Maximum flexibility for personal security

The funktel TETRA Secury System (TSS) can be integrated—radio- or line connected—with existing TETRA infrastructures sourced from a preferred supplier, without any difficulty. A standard TETRA system thus becomes a TETRA Safe.

For radio connection, the funktel Secury Server will be integrated with an existing TETRA network by means of a TETRA modem. With this TSS TMO modem solution a line connection between the server as well as the TETRA switch and base station is not required. The number of required modems depends on the necessary data throughput for localisation transmissions and alarm messages.

Increasing requirements can be dealt with simply by adding further modems: for example, to support a larger number of TETRA Secury handsets or to enable a connection with the warden's round control and logging system.

With the TSS TMO modem solution there is a cost-effective variant of personal emergency signal solution available, offering maximum flexibility and scalability. The advantages are obvious:

- Connection with TETRA infrastructures independent from particular manufacturers
- Minimal costs entailed in installation or commissioning
- Redundancy option via installation of multiple radio modems
- Flexible expansion

Alternatively a line connection to existing TETRA systems can also be set up directly via the relevant application interface of the infrastructure manufacturers. By using these interfaces, communication between the alarm control point and the personal emergency signal handsets is optimised, thanks to higher data throughput. Lower data exchange via the air interfaces preserves system resources and increases reliability.

Efficient TETRA communication system TETRA Safe

The professional and scalable TETRA radio-system solution

TETRA Safe is a compact TETRA system solution, which makes the efficient TETRA technology available to all users. The highly compact system is easy to install and integrates a base station, switching and gateways in a single unit. In this way it becomes possible for conversations on the telephone network to be conducted on TETRA via the integrated telephone interface.

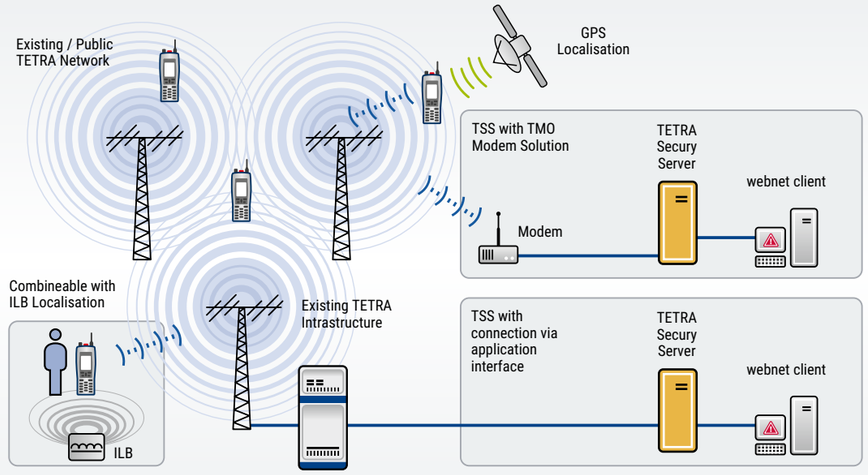
Further enhancement of the performance spectrum is possible via linking with other applications, such as dispatcher systems or speech and data recorders. Furthermore, TETRA Safe can be expanded in terms of capacity (additional TETRA carriers) or radio coverage (additional base stations) at any time. This scalability allows optimal adaptation to changing requirements.

Thanks to the consistent implementation of IP technology, TETRA Safe can be easily integrated in existing company networks. A number of stations can be cost-effectively interconnected by means of IP networks.

To meet the highest security and system availability requirements for sensitive areas, the main components of TETRA Safe can be implemented redundantly, if so required.

Characteristics

- Compact TETRA system combining a base station, switching and integrated gateways
- Standard interfaces for connection to external applications
- IP-based system architecture
- Allows flexible expansion and redundancy options
- Low installation cost as well as minimal site specifications and operating costs



TETRA Safe System Overview and Application Scenarios

TETRA Secury handsets funktel FT4 S series

funktel FT4 S: The TETRA Secury handset.

The funktel FT4 S handset provides mobile personal security for solitary workers in hazardous workplaces and is integrated in the funktel TSS TETRA security system – complying 100% with the safety requirements of BGR139.

In addition to the standard performance features, the funktel FT4 S offers efficient integrated sensor and localisation functionality, with cyclic function testing. Various manual alarms (emergency and warning alarm), as well as automatic alarm modes (position, loss, no-movement and time-dependent alarm) are available.

funktel FT4 S Ex: Intrinsically Safe TETRA Secury handset.

For the first time, a TETRA radio is available that combines both explosion-proofing and personal security functions in a single TETRA handset: The funktel FT4 S Ex.

The funktel FT4 S Ex is a high performance TETRA handset for professional users and is suitable for use in areas with a high explosion risk.

The intrinsically safe funktel TETRA handsets will also satisfy the harshest demands of an industrial environment and will guarantee the greatest possible level of security for the user thanks to their integrated alarm functions.

■ With the FT4-series of TETRA handsets funktel has once again set the benchmark for functionality, as well as ease of use and convenience. Optimal ergonomics, comprehensive protection against external influences and extensive TETRA performance features are key differentiators of the funktel FT4-series handsets.

In addition, the funktel FT4 S and FT4 S Ex Secury handset versions offer high performance sensors for localisation as well as manual and automatic alarm triggering. The Secury versions ensure that the safety of solitary workers in hazardous work environments can be actively secured—complying with the stringent requirements of the German BGR139 standards.

Maximum future-proofing is ensured by a continuous process of further development and seamless integration with existing funktel Secury systems or TETRA infrastructure.

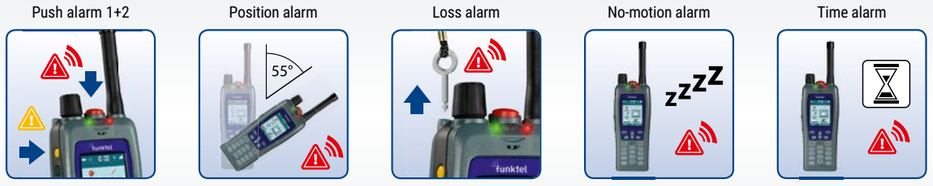
Further information regarding the funktel FT4 series TETRA handsets can be found in separate data sheets and brochures —please inquire!

Highlights:

- Fully integrated personal emergency signal function
- Free programmable access level for communication and operation
- High resolution 2,2" TFT colour display, 240 x 320 pixels (QVGA), 262 000 colours
- IP 65-class protection (water-jet and dust-proof) —suitable for outdoor use
- Robust, impact-resistant casing with full rubber encapsulation for additional shock absorption
- Large alarm button and illuminated, clearly demarcated keys for easy use
- Individually assignable function keys
- Comprehensive carrying and audio accessories available (also in ATEX versions)

Also available depending on the version:

- Integrated GPS module
- Explosion-proof versions complying with the ATEX directives



Warden's Round control and logging system

■ The "Warden's Round control and logging system" completes the comprehensive logging and programming functions of the funktel TSS system to enable the active and automatic management of guards—making it possible to organise the operating processes within the security guard service in an entirely new way.

"People are creatures of habit"—this piece of wisdom has already been the weak point of so many security guard systems: a routine process can be spied upon and thus be used to aid criminal activities. The Warden's Round software module assists with randomly scheduled rounds guided by text messaging, to prevent these habits from forming.

Rounds can be changed conveniently to suit the actual requirements (such as bypassing certain areas, changing the sequence, interruption or termination of rounds, etc.). Decentralised time clocks and cards become completely unnecessary.

Features:

- Scheduled rounds can be swapped around manually or randomly
- Simultaneous control and monitoring of multiple rounds
- When a guard passes a check point, an automatic notification of the next way point, together with a time indication, is displayed on his handset
- Automatic instructions and notification of the required actions are displayed on the guard's handset at the correct place and time
- When a check point is passed, the time and location is automatically transmitted to the control point
- Simultaneous alarm indications on the control room monitor and the webnet client
- Monitoring and programming of all localisation and alarms

Security & Communication

MORE THAN 45 YEARS OF EXPERIENCE

- Personal Security
- Guard Round Control
- Localization
- Explosion Protection
- People Tracking
- Messaging

funktel GmbH
Windmuehlenbergstr. 20-22
D-38259 Salzgitter

Phone: +49 - 53 41 - 22 35-0
Fax: +49 - 53 41 - 22 35-709

www.funktel.com

5.000.916.011 · EN7 · 0216