



α

alpha series
make sense technology

alpha Personal Network

*Modular personal monitoring and alarm system
with telemetric capabilities*

MSA
The Safety Company

The Homo Securitus

MSA is proud to present the *homo securitus*, our safety blueprint for emergency first responders and other professionals whose job places them in hazardous environments. The *alpha Personal Network*, a wireless short-range and long-range monitoring, detection and communication system, adds a whole new multi-layered dimension of safety. A direct increase in personal protection is enhanced by a further proficiency-based safety advantage. Ease-of-use features enable personnel to better focus on their work. Concentration and performance are optimised as potential risks are reduced. The *alpha Personal Network* is the safety net for today's high-risk operations.



alphaBASE

The *alphaBASE* base station communicates with all active *alphaSCOUTS* to provide complete telemetric capability.

alphaCONTROL

The *alphaBASE* is powered by *alphaCONTROL* software for automatic monitoring without the need for operator intervention. An alarm signal alerts command officers of irregularities. Complete incident data is also automatically logged and analysed, replacing time-consuming manual reports. Conventional monitoring without any radio link is possible as well.

alphaMITTER

The *alphaMITTER* sends air pressure data to the *alphaSCOUT* and/or *alphaHUD* once per second.



alphaSCOUT

Using the *alphaSCOUT* is like having a guardian angel by your side. This handy wireless device functions as a pressure gauge, mini-computer and motion sensor/alarm combined. After receiving pressure data from the *alphaMITTER*, the *alphaSCOUT* calculates remaining service time based on your breathing rate. Should you be unable to move, an integrated sensor activates an alarm to let your team know you need help. In combination with the *alphaBASE*, the *alphaSCOUT* can also receive an evacuation notice from incident command.

alphaHUD

The *alphaHUD* Heads-Up-Display provides hands-free monitoring of air supply through the data received from the *alphaMITTER*. It can also deliver an evacuation signal sent long range from the *alphaBASE* to the *alphaSCOUT*.

ALTAIR® 5

The *ALTAIR 5* multi-gas detector measures up to 6 gases simultaneously. This data is transmitted wireless to the *alphaBASE* via the *alphaSCOUT*.

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short-range transmission

▬
long-range transmission

The *alpha Personal Network* components

The *alpha Personal Network* is a system of modular and wireless components that can be individually integrated to enhance your operation safety and capability as needed. A basic setup includes personal monitoring, pressure data and motion alarm. This can be extended to include telemetry and evacuation notification. Existing AirGo, AirMaXX and BD 96 SCBA systems can be upgraded to include alpha Personal Network capability.

Despite its technological sophistication, the *alpha Personal Network* system can be operated intuitively and is largely automated. All components are designed to withstand the kind of rough treatment that inevitably occurs in an emergency operation. They are also ATEX approved for zone 0 environments.



alphaSCOUT

Function

The *alphaSCOUT* is automatically activated by turning on the cylinder valve. To pass it on to replacement personnel, simply depressurise the SCBA.

The *alphaSCOUT* can now be switched off and made available for the next user. Individualised *alphaTAGs* are used to identify each new user.

alphaSCOUT as Repeater

Alarms are transmitted even when there is no direct radio contact. Any colleague's active *alphaSCOUT* can function as a relay station to extend the signal range. In repeater mode the *alphaSCOUT* can also be used as a stand-alone repeater. Just place a unit between a remote firefighter and the *alphaBASE* when conditions call for it.

Features and Benefits

- Wireless & SCBA-independent
- Significant savings through shared units
- Monitors and displays pressure, motion, remaining service time and battery status
- 25 hrs of continuous battery-powered operation
- User identification through *alphaTAG*
- Data radio module integrated in *alphaSCOUT TM* housing
- Several special functions can be activated:
 - Can act as „telemetric motion sensor“ during inspection work without SCBA
 - Can act as dedicated „repeaterSCOUT“ to extend range
 - In „beeper mode“, responsible personnel not located at *alphaBASE* receive alarms of other *alphaSCOUTs*

by your side

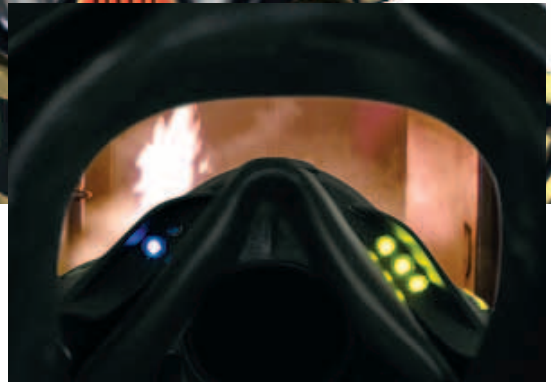


in direct view



alphaHUD

Using a non-distracting LED display at the perimeter of your field of vision, the **alphaHUD** heads-up-display lets you monitor your air supply while keeping your hands free. The wireless **alphaHUD** provides pressure status and alarm information. It is easily attached to the inside of your Ultra Elite mask.



Advantages include greatly improved operational efficiency and safety. In combination with chemical protection suits, where the ability to use a hand-operated gauge is limited, **alphaHUD** is indispensable. When used in conjunction with the **alphaSCOUT** and **alphaBASE** command communication option, the **alphaHUD** can also deliver an evacuation signal.

Features

- Two banks of lights on the left and right of your field of vision for balanced perception
- Brightness automatically adjusts to the ambient light for non-obtrusive visibility
- LEDs glow for two seconds then gradually dim for eight seconds providing constant, non-distracting readability
- At low-pressure, a blinking alarm signal is also visible externally from both sides of the mask as a buddy light
- Display of evacuation alarm
- Display of status and alarms from linked **ALTAIR 5** multi-gas detector



In shielded surroundings the signal of the first **alphaSCOUT** is extended by the integrated repeater of the second **alphaSCOUT**.

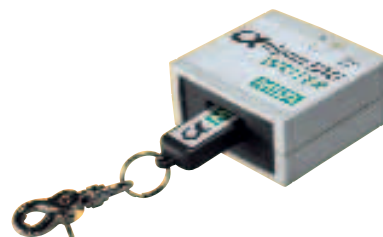
alphaTAG



Each user can identify himself with the **alphaSCOUT** he is using through the **alphaTAG** identification tag. A second **alphaTAG** can be used to register the corresponding station, watch or vehicle.

TAGwriter

Individual **alphaTAGs** are programmed by the **TAGwriter**, using a convenient PC software module.



alphaMITTER

A short-range transmitter attached to the SCBA, the **alphaMITTER** sends air pressure data to the **alphaSCOUT** or **alphaHUD** once every second. It can be retrofitted to AirGo, AirMaXX and BD 96 SCBA systems with SL pneumatics.



ALTAIR® 5

The versatile, high-performance multi-gas detector **ALTAIR 5** is capable of measuring up to 6 gases simultaneously and can be fitted with a wide range of both toxic and infra-red sensors. It can be configured for individual requirements to suit a myriad of applications.

Used in conjunction with the **alpha Personal Network**, the **ALTAIR 5** with W-LAN option can monitor operative personnel using breathing apparatus and portable gas detection equipment while sending information to **alphaBASE**. All gas readings and alarms can be seen by incident command monitoring personnel in real time.

Accessories

Holster for xplore tablet PC

Serves to conveniently position the **xplore tablet PC** including **alphaBASE**.

Wall Mount

Lockable support bracket to fix PC to a wall, e.g. in a vehicle. Quick release mechanism. The active version includes a port replicator which allows charging and provides full connectivity (USB, LAN). To undock, just grab PC and go.

Extended Antenna

- Designed to overcome the shielding effect of larger building structures
- Antenna is placed inside the object and connected to **alphaBASE**
- Cable acts as leaky feeder: radio contact is maintained
- Set includes: plain antenna on a tripod, 100 m coaxial cable on a reel and adaptor to **alphaBASE**

W-LAN Booster to connect PCs in a larger incident

- For interlinking fire service vehicles at larger incidents
- Acts as a common W-LAN access point
- Uses high-power radio to communicate with other boosters
- Benefit: a very large, self-organising and reliable local area network
- On request only



up to date

alphaBASE

The **alphaBASE** sender/receiver unit comes in two variations. **alphaBASE** standard is compatible with all Windows-based PCs using a USB 1.1 interface. An external aerial with magnetic foot can optionally be used for vehicle mounted applications.

A battery-powered version of the **alphaBASE** or the **alphaBASE** standard can also be used with the **xplore TABLET PC**. The combination **alphaBASE** battery-powered and **xplore TABLET PC** allows full freedom of movement for mobile applications.

The **xplore TABLET PC** with its compact design is the ultimate tool for managing information on the go. The housing is extremely robust and watertight making it suitable for use in emergency service operations or other harsh environments. The high-resolution screen provides good viewing in all lighting conditions, including direct sunlight.



xplore TABLET PC
with **alphaBASE** battery powered

alphaBASE standard & battery powered features

- 24 **alphaSCOUTs** can be logged onto one base station
- Real time monitoring due to fast refresh of data
- **alphaBASE** standard can be mounted in vehicles using an external aerial
- **alphaBASE** battery powered attaches to **xplore TABLET PC** for a mobile & rugged system

xplore TABLET PC features

- Extremely rugged & watertight (IP 65) for use on emergency operation grounds
- High-brightness display is visible in all lighting conditions, including direct sunlight



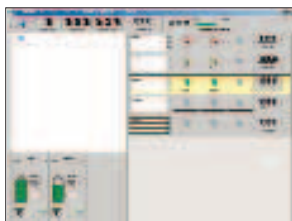
alphaBASE standard plus
PC or **xplore TABLET PC**

and in constant contact

alphaCONTROL Software

alphaBASE works together with **alphaCONTROL** for automatic monitoring without the need for operator intervention. The real-time display shows: user, team assignments, cylinder pressure including time remaining and gas concentration. Motion alarm, manual alarm, low cylinder pressure and gas alarms are highlighted by pop-up windows and audible signals. Complete incident data is also automatically logged and analysed, replacing time-consuming manual reports and maximising traceability.

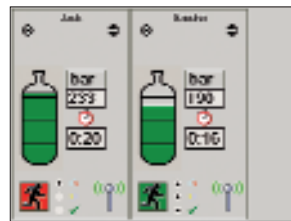
- Automatic monitoring without operator intervention
- Real-time display of personnel status for instant overview
- Automatic report generation spares valuable resources
- Distinct alarms for low pressure and motion
- Can be used for conventional monitoring without radio link (for details please ask for the separate flyer)
- Professional substitute to traditional accountability boards
- Integral part of modular public and private safety management software
- Centralised monitoring of multiple **alphaBASEs** linked via wireless LAN (for details please ask for the separate flyer)



log on



gas alarm



evacuation



report

Applications and Combination Options

The *alpha* Personal Network components can be used in several combinations for a wide variety of applications, ranging from routine inspection work to large scale emergency first response. A few of the most popular uses are detailed below.

SCBA Monitoring

Keep an eye on all your crew members, even in major incidents:

alpha Personal Network enables full telemetric monitoring of pressure, motion and other data. The *alphaBASE* can either be installed in a command vehicle or used as a hand-carried, mobile system with the battery powered *alphaBASE* mounted onto an *xplore TABLET PC*. Create your reports by mouseclick. Adding the *ALTAIR 5* gas detector enables full monitoring and documentation.

alphaMITTER + alphaSCOUT TM + alphaHUD + alphaBASE



When you work alone

Industrial plant inspection tours normally don't require respiratory protection. Nevertheless on large and complex sites it may be necessary to monitor personnel who are working alone. The combination of a standalone *alphaSCOUT TM* with an *alphaBASE* located in a supervised area is an ideal solution for this application. Adding the *ALTAIR 5* gas detector enables full monitoring & documentation.

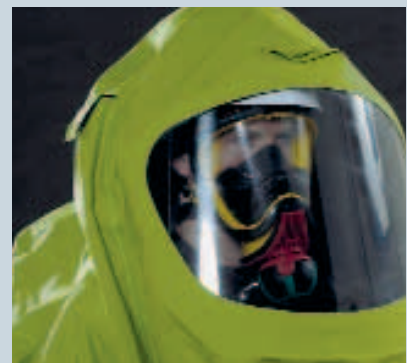
alphaSCOUT TM + alphaBASE + ALTAIR 5



With chemical protection suits

Checking pressure in a chemical suit is particularly tiresome and distracting, since you have to take your arm out of the sleeve to find the gauge. That's why professionals who need to work in chemical suits especially appreciate the added safety and efficiency provided by an *alphaMITTER* and *alphaHUD* combination. Air pressure and other vital information are monitored directly in the lower perimeter of your field of vision – hands free. For details please ask for the separate flyer.

alphaMITTER + alphaHUD



Technical details

Long range

The *alpha Personal Network* takes advantage of state-of-the-art, digital radio transmission. With excellent receiver sensitivity and 500 mW output power, the highly reliable signal has a range up to 4 km.

Frequency

866 MHz (35 cm band) provides a licence-free frequency with good penetration. The base station automatically picks a free channel.

Polling interval

The *alphaBASE* polls all logged-on *alphaSCOUTs* sequentially. A complete polling cycle takes 3.4 seconds, which equals the maximum reaction time.

Capacity

Up to 24 *alphaSCOUTs* can be logged onto a base station. Several transmitter/receiver systems can be operated simultaneously in close proximity to one another.

Unique signal pairing

The wireless USB 2.4 GHz (W-USB) signal exchange between *alphaMITTER*, *alphaSCOUT* and *alphaHUD* creates a defined network around the person. When an *alphaHUD/alphaSCOUT* makes contact with an *alphaMITTER*, they establish a unique signal pairing that cannot be confused by other devices in the vicinity. Nevertheless devices are quickly interchangeable as the pairing of an *alphaHUD/alphaSCOUT* with another *alphaMITTER* is easily conducted.

Power Supply

alphaMITTER: 3 x AA (e.g. Duracell Plus MN 1500)

alphaSCOUT: 4 x AA (e.g. Duracell Plus MN 1500)

alphaHUD: 1 x CR2 (e.g. Panasonic Photo Power CR2 Lithium)

alphaBASE: 1 x Li-Ion; 7.2 V, 2200 mAh



Approvals

Directive 94/9/EC (ATEX)

BVS 05, ATEX E 150,  II 1G, EEx ia IIC T3/T4

EN 50 014, EN 50 020, EN 50 284, $-30^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Directive 89/336/EC (EMC)

EN 61 000-6-2, EN 61 000-6-3

Radio approvals according to Directive 1999/5/EC (R&TTE)

EN 302 208-1/-2, EN 300 440-1, EN 301 489-1/-3, EN 50371

alphaHUD: Full face mask: EN 136/SCBA component: EN 137

Ordering Information

10058211	<i>alphaMITTER</i> , retrofittable to AirMaXX, eXXtreme or AirGo with SingleLine (Q) (incl. support bracket for <i>alphaSCOUT</i>)
10069803	<i>alphaMITTER</i> , retrofittable to BD 96 with SingleLine (Q), (incl. support bracket for <i>alphaSCOUT</i>)
10086118	<i>alphaHUD</i> (incl. battery)
10058212	<i>alphaSCOUT TM</i> – Telemetry Module (complete set incl. long-distance radio, batteries, <i>alphaTAG</i>)
10058213	<i>alphaSCOUT</i> (complete set incl. batteries and <i>alphaTAG</i>)
10078682	Retrofit of radio module to <i>alphaSCOUT</i>
10065874	Support bracket to attach <i>alphaSCOUT</i> (set of 10)
10065873	<i>alphaTAG</i> (set of 5)
10071717	Labels for <i>alphaTAG</i> (10 sheets of 42 labels)
10065875	<i>TAGwriter</i> (incl. USB cable)
on request	<i>ALTAIR 5</i> (-W-USB)



xplore TABLET PC with *alphaBASE* battery powered

10058214	<i>alphaBASE</i> Standard (incl. power supply, direct and external aerial with magnetic foot and software)
10070795	<i>alphaBASE</i> battery powered (incl. software, 2 batteries and charger)
10068805	<i>xplore</i> TABLET PC
10076041	Set: <i>xplore</i> TABLET PC, <i>alphaBASE</i> battery powered, accessories (incl. software, 2 batteries and charger) in rugged case
10070562	Vehicle mount for <i>xplore</i> TABLET PC (incl. 12/24 V power supply)
10096636	Vehicle mount with port replicator
10095416	Extended antenna (incl. 100m cable on reel, tripod)
10096347	Holster
on request	W-LAN booster



Ultra Elite mask with integrated *alphaHUD*

All breathing apparatus related devices are approved according to EN 137, and meet EN 137:2006 (including Flame Engulfment Test).

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