

## METOR 6S

### TECHNICAL SPECIFICATIONS



#### General Information

Metor 6S is a state-of-the-art Walk Through Metal Detector for demanding high sensitivity screening applications. The unit has been developed using the latest technology to meet the most stringent security screening requirements. It has been specially designed to detect small ferrous and non-ferrous items such as razor blades, handcuff keys, detonator caps, coins, jewelry, microprocessors, memory chips etc.

#### Typical Metor 6S applications are:

- Prisons—screening inmates and visitors
- Mints, electronics industry, jewelry manufacturing, pilferage prevention and access control

Metor 6S is a very high quality Walk Through Metal Detector with excellent operational performance and versatile capabilities. The key benefits include

- Meets NIJ Standard-0601.02 requirements
- Superior immunity
- Ideal for versatile high sensitivity applications
- Built-in advanced features for enhanced security and usability
- IP 55 protection class against intrusion of foreign objects and water

#### Operation Principle

##### Multi-Zone Metal Detection Technology

The operation of the Metor 6S is based on continuous wave technology. The Metor 6S uses a unique coil design consisting of eight independently adjustable detection zones. Moving metal objects cause alarm when the signal exceeds the alarm threshold. Location of detected object(s) is displayed by the zone display.

##### Continuously Active

The Metor 6S is continuously active. At no time is it possible to toss, pass or slide a weapon through undetected. No photoelectric, infrared, or other sensor device is used to enable and disable the detection circuitry and thus mask the impact of external interference.

#### Metor 6S Features

##### Easy Assembly

- Metor 6S's integrated construction allows installing the unit in 5-10 minutes
- Crosspiece fits either way
- Easy to use connectors

##### Zone Display

Metor 6S has an integrated full-length vertical zone display located on the exit side of the transmitter coil panel to indicate the location of the detected metal object(s) being carried through the gate. The zone display timing is adjustable and the display can be enabled or disabled.

##### Intelligent Traffic Counters

Metor 6S incorporates fully integrated, intelligent traffic counters as a standard feature. The counters are fully integrated inside the coil panels meaning they are completely invisible. The desired direction of travel can be selected

and the number of passengers, number of alarms and alarm percentage can be displayed on the alphanumeric display. The traffic counter can be set to increase the count in one direction and decrease the count in the opposite direction. This type of counter gives a more accurate traffic count, especially when passengers are asked to step back through the gate to divest themselves of alarming metallic items. Alternatively the counters can be set to increase the count in one direction and have no effect in the opposite direction.

### **Traffic Lights** (optional accessory)

The traffic lights facilitate controlling the traffic flow through the checkpoint. The Metor 6S has traffic lights that utilize international signs for "STOP" and "GO". The traffic lights are integrated into the crosspiece in order to provide the best possible visibility. The timing of the traffic lights is adjustable and the lights can be enabled or disabled.

### **Power Indicator**

The top segment of the zone display flashes to indicate that the power is on. This feature can be switched On or Off.

### **Random Alarm for non-alarming/alarming**

Metor 6S can be set to randomly alarm for selected percentage (0-100%) of non-alarming people passing through the metal detector. Random alarms are generated with 1% accuracy. This feature can be switched On or Off. The audio/visual indication of the random alarm can be set to be distinct from the normal alarm indication.

Metor 6S can be set also to generate a distinct alarm randomly for a selected percentage (0-100%) of alarming people to allow random pat down checking of people who generated a natural alarm due to metal items they carried on them. This feature can be switched On or Off.

### **Calibration Guard**

Calibration Guard observes calibration parameters. When any of the calibration parameters are changed from the saved value a warning message is shown. This feature can be switched On or Off.

### **Power Guard**

Metor 6S is equipped with Power Guard that alarm when the unit loses power, i.e. the power cord is disconnected or power source breaks up.

### **Ready state violation**

Monitors the operation of the Metor 6S and alarms in case of a person accessing the system when it is not ready for normal operation.

### **Noise Measurements**

Metor 6S has two special noise measurement functions: EM Noise and Total Noise. EM Noise measures only electromagnetic interferences from the environment. Total Noise mea-

sures both electromagnetic interferences and mechanical interferences like vibration and moving metal.

### **Object Speed Response**

Metor 6S operates over a wide object velocity range. The low and high speed response of the unit can be independently adjusted.

### **Parameter Memory**

Non-volatile memory is used to store all of the parameters regardless of the power connection. At no time is a battery system required to maintain the parameters when the main power is disconnected.

### **I/O Configuration**

Metor 6S has two configurable digital Inputs and Outputs.

### **Excellent Interference Immunity**

- *Static Metal Compensation:* Static metal close to the Metor 6S is compensated by digital filtering.
- *Influence of Moving Metal:* The Metor 6S detection coils are designed to maximize the ratio between moving metal inside and moving metal outside the detector.
- *Immunity to Mechanical Vibration:* The mechanical construction of the Metor 6S enables an excellent immunity against mechanical vibration.
- *Influence of Electromagnetic Interference:* The carefully selected operating frequencies together with effective digital filtering allows excellent immunity to electromagnetic interference. Furthermore the coil design of the Metor 6S is optimized to minimize external electromagnetic interference. Metor 6S meets with the requirements of applicable standards for Electromagnetic Compatibility.

### **Self Diagnostics**

A comprehensive self-diagnostics system continuously monitors the unit's operation. If a fault condition occurs, an alphanumeric readout shall display the exact nature of the problem. Operating personnel cannot override a fault condition prior to it being corrected.

### **Warranty**

Metor 6S has a two-year warranty for parts.

## **Metor 6S User Interface**

### **Display unit**

The display of Metor 6S is equipped with alphanumeric display, keypad, including standby button, status LED's and audible indicator.

### **Alphanumeric Display**

The alphanumeric display is a 2x20 character display. It indicates the relative size of the metal object on bar graph. All programming and statistical as well as error information is shown with explicit text format on the display.

### Keypad

The Metor 6S display unit is equipped with a keypad. The keypad has the same function keys as the optional remote control unit.

### Standby Button

The Metor 6S's display unit incorporates a standby button. During standby mode metal detection is disabled, traffic lights, display and other possible power indications are turned off. Standby button can be enabled/disabled from user interface (requires super user privileges).

### Status LEDs

The status LEDs consist of Alarm/Wait/Ready LEDs. Alarm/Ready LEDs indicate normal operation. The Wait LEDs indicate that the Metor 6S is in programming mode.

### Build-in Help Texts

The build-in help text guides the user when navigating through the menu structure. Metor 6S is easy to use even without the manual.

### Bi-directional Wireless Remote Control Unit (optional accessory)

Metor 6S can be equipped with a wireless bi-directional remote control unit for programming. Bi-directional function enables loading parameters from one Metor 6S and sending the same parameters to other Metor 6S's. This makes the programming of multiple Metor 6S units easy.

One remote control unit can be programmed to operate several detectors or up to ten remote control units can be tuned to a specific Metor 6S.

For programming the Metor 6S there is also a keyboard on the display unit.

### Security

In the design of Metor 6S, security of operation has been in a high priority.

### Secure Connections

All the cabling and connections except external power supply are located inside locked crosspiece. The crosspiece is key-locked preventing any unauthorized persons to access the electronics unit or remote control unit.

Metor 6S is equipped with one On/Off switch. The power switch is accessible by opening the crosspiece lid – accessed only with a key.

### Access Code Protection

Parameter adjustments are access code protected. Access code protection eliminates any unauthorized tampering with parameters. Only authorized personnel can change the access code.

The user interface locks down after entering a wrong access code three times.

The remote control operation is also secured with code hopping algorithm.

Metor 6S enables both numeric and alphanumeric access codes as user selectable feature.

### Fully Configurable User Access Rights

Metor 6S has fully configurable user access rights. This allows different type of users to have access to all or only some specific functions. There are following pre-configured user groups:

#### Super User

- Access to all parameters
- Access code required for access

#### User

- View statistical information and clear the counters
- Access code required for access
- Other rights the same as for operator level

#### Operator

- Read only -level (allowed to read Program and Sensitivity)
- Allowed to adjust volume
- No access code required

Metor 6S has 8 (7+ "User" Group) fully configurable user groups that can have individual access rights. The Super User group is fixed. There can be totally 99 different users with individual passwords. Each user belongs to one of the 8 configurable user groups or to the Super User group.

## Technical Specifications

### Mechanical Construction

Metor 6S coil panels use a mechanical construction which gives the whole unit an excellent durability and mechanical stability. The panels are finished in laminate with plastic zone display profiles. The coil panels are equipped with integrated boots that protect the panels against floor washing liquids. The boots include holes for fixing the detector to the floor. The crosspiece is made of aluminum that provides excellent durability in applications requiring multiple installations and dismantling.

### Hardware

Metor 6S has an electronics unit in a metal enclosure. The electronics enclosure is located inside the lockable aluminum crosspiece.

### Software

Metor 6S software includes detection programs based on the requirements by the NIJ Standard-0601.02. Additionally, a variety of detection programs are available for detecting both

ferrous and non-ferrous items. Operations are easy to upgrade using a SD –memory card when future software versions are introduced.

### **Sensitivity**

The sensitivity settings are divided to overall sensitivity and zone sensitivity.

- There are 100 sensitivity steps available to adjust overall sensitivity.
- The zone sensitivity of each of the 8 zones can be adjusted independently. The range of the zone sensitivity setting is 0 – 200 % with respect to the overall sensitivity.

Sensitivity can be calibrated either manually or automatically.

### **Automatic Sensitivity Calibration**

An Automatic interactive Sensitivity Calibration Program enables the detector's sensitivity to be automatically selected for a specific weapon or test object. The user can choose the amount of walkthroughs with the test object(s) on which the automatic sensitivity setting is based (minimum 3 passes).

### **Automatic Floor Sensitivity Calibration**

Metor 6S has an Automatic Interactive Floor Sensitivity Calibration Program to help floor level calibration. The program enables the detector's floor level sensitivity to be automatically selected for a specific weapon or test object. The user can choose the amount of walk-throughs with the test object(s) on which the automatic sensitivity setting is based (minimum 3 passes).

### **Operating Frequency**

Metor 6S has 10 operating frequency sets. The operating frequency sets have been carefully selected from the noise free frequency band.

### **Automated Frequency Search**

Metor 6S searches automatically suitable operating frequency during start-up or when the feature is activated from the user interface. This feature can be switched On or Off.

### **Multiple Unit Operation**

Two or more Metor 6S metal detectors can be operated in close proximity. Side-by-side use does not require synchronization cables.

### **Alarm Indication**

Display unit indicates alarm with

- Audible alarm
- Alarm LED's
- Alphanumeric display with signal display relative to signal size
- In addition, alarm is indicated with Vertical Zone Display on the Transmitter coil panel.

### **Network Connection**

Metor 6S is connectable to MetorNet 3 Pro Web security monitoring system through ETHERNET.

### **Power Supply**

Mains, nominal: 100 - 240 VAC

Mains, maximum: 90 - 264 VAC

Mains frequency (nominal): 50/60 Hz

Battery (optional): 12 VDC

Power consumption, typical: 30 W (AC), 25 W (DC)

The Metor 6S has the ability to adjust automatically to variations in line voltage from 90 to 264 VAC or 12 VDC without operator intervention. In an installation site where line voltage regulation is a problem, there will be no degradation in WTMD performance.

### **Battery Back-up Set (optional accessory)**

Metor 6S can be equipped with an optional 12 VDC battery to provide up to 8 hours operation in case of mains voltage failure.

### **Operating Temperature**

Ambient operating temperature range:

-20°C to 60°C (-4°F to 140°F)

### **Operating Humidity**

Ambient operating humidity range:

0 to 95%

### **Protection**

IP 55, against intrusion of foreign objects and water

### **Weight**

63 kg (139 lbs)

### **Dimensions**

Width

Interior: 71 cm (28 in.)

Exterior: 85 cm (33.5 in.)

Height

Interior: 205 cm (80.7 in.)

Exterior: 224 cm (88.2 in.)

Depth

70 cm (27.6 in.)

### Regulatory Information

#### **Standards and Directives**

- European Electromagnetic Compatibility (EMC) Directive 2004/108/EC
  - EMC Standard – IEC/EN 61000-6-3:2006/2007 (Emission)
  - EMC Standard – IEC/EN 61000-6-1:2005/2007 (Immunity)
- European Low Voltage Directive 2006/95/EC
  - Safety Standard - IEC/EN 61010-1 (Electrical Safety)
- Federal Communications Commission Class B Standards for noise emission from electrical equipment

#### **Magnetic field safety**

Safe for persons with pacemakers and pregnant women

Complies with the following standards and recommendations

- 1999/519/EC - European Union Council recommendation on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)
- 2004/40/EC – European Union Parliament and Council Directive on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)
- ICNIRP 1998 – Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields up to 300 GHz
- IEEE Std C95.6 (2002) – IEEE standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0 to 3 khz.
- IEEE Std C95.1 (2005) – IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ACGIH-0302 (2002) (Occupational) – The American Conference of Governmental Industrial Hygienists guidelines to occupational exposures only.

#### **Additional Safety Information**

No Metor products will erase, alter, or damage magnetic storage media including credit cards, computer floppy disks, tapes, or IC's. The effects from the operation of the electronics and the low intensity magnetic fields of the Metor Walk Through Metal Detectors are harmless to people with pacemakers, pregnant women, the operator, and general pedestrian traffic.