

FLEET MANAGEMENT MADE EASY ANY TIME, ANYWHERE



Light vehicle fleet management and machine monitoring systems are playing an increasingly vital role in optimizing operations, reducing the unplanned maintenance costs and improving operator safety for mining companies.

The innovative solution provides relevant, customized information to management at every level of the operation. The system can be installed on a diverse range of vehicles, regardless of make or model.

 $\mathsf{EarthTrack}^\mathsf{T}$ Light Vehicle Monitoring can be used to deliver machine and operator data from multiple light vehicles across a fleet.

It empowers management with information about machine and operator activity, resulting in improving light vehicle operations.





Lower maintenance costs from damage and operator abuse.





Safer operation by encouraging better driving habits.

OPERATOR ACCESS CONTROL

Only licensed operators will be able to use the equipment via card reader or keypad. It also identifies license information, expiry dates and training requirements.

PRE-START AND POST-START CHECKLIST

Checklists can be customized to suit specific vehicle and operational requirements.

ENGINE MONITORING

Alerts the operators and captures engine-related events: oil pressure, temperature, coolant level and over-speed violation.

GROUND SPEED MONITORING

The ability to report ground speed violations through Geofenced areas/zones.

VEHICLE IMPACT MONITORING

Captures vehicle impact events across three configurable thresholds: low, medium and high.

GROUND SPEED ZONING

Intended to be used in conjunction with a Muirhead™ Speed Limiter to physically limit the maximum vehicle speeds through Geofenced areas/zones.

CRITICAL OUTPUT

Voltage-free NO/NC contacts available to interface with machine and accessories activated by critical events such as checklist, events and impacts.

SUMMARY REPORTING

Daily, weekly and monthly summary reporting provides an overview of all violations and events across the light vehicle fleet.

CONNECTIVITY

Cellular/Mobile or Wi-Fi network communications.

BATTERY VOLTAGE

Reports on battery voltage and provides the operator warnings for low battery.

SEAT BELT MONITORING

Alerts and reports when the seat belt is not worn.

SCALABLE

Highlight desired outcomes to reveal specific data.

SERVICE SCHEDULER

Provide alerts around servicing times, which can be programmed around machine hours or a time-based schedule.

AUTOMATED REPORTING

Summary reports outlining daily information, with drill down for more detailed information around specific events.

OUT-OF-SERVICE

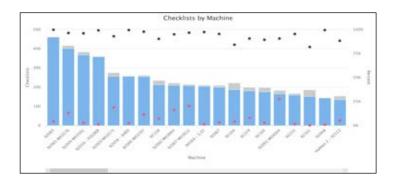
Allows operators or maintenance personnel to place the machine into "out-of-service" if there is an issue with the vehicle. It is an electronic version of the paper tag system.

EXPORT DATA

Export information in multiple formats including CSV, PDF, PNG image or scalable SVG web graphic.

PRE-START AND POST-START CHECKLISTS

- Eliminates paper checklists and data input requirements, reduces administration time.
- Customized checklists can be assigned based on different machine types and operator requirements.
- Supports multiple shifts with adjustable start times and operator changes.
- Checklist questions can activate maintenance and critical alerts triggering email notifications to relevant authorized people.
- Critical alerts may be configured to place the machine into "out-of-service". It provides complete customization based on user preferences.
- All completed checklists can be sent via email to a specific individual or group.
- Checklists preferences can be altered easily at any time.
- Checklists questions can be constantly reordered ensuring operator engagement with the questions.





VEHICLE AND ENGINE SPEED MONITORING

THE INFORMATION PROVIDED:

- The machine ground speed and engine RPM is displayed on the screen for the operator to view.
- When an operator exceeds a pre-set speed, there will be a warning and alarm on the EarthTrack™ display. Reporting is available for all speed violations with details of the operator and duration of the offence.
- Separate ground speed thresholds may be applied for Underground or Surface applications and hazardous or high pedestrian traffic areas by the incorporation of Geofences.



OUT-OF-SERVICE

Out-of-Service feature allows machines to be locked out of general use, still allowing supervisors or maintenance personnel to move the equipment.

This is to prevent operation of machines which maybe damaged/unsafe due to "unplanned reasons". This feature can also prevent operation of machines for "planned reasons" such as scheduled services.

Key benefits:

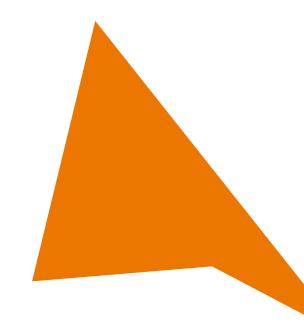
- Eliminated paper tags results in reduced administration costs.
- System limits machine access to authorized people.
- Out-of-Service may be automatically applied when a critical event occurs.
- Prevents use of machines that are due for schedule maintenance.



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TECHNICAL SPECIFICATIONS

SYSTEM OVERVIEW

 Web Portal Requirements - Internet Access:
 An internet connection is required

 Web Portal Requirements - Browser Version:
 We recommend Chome, Firefox or Edge for the best user experience Internet Explorer is not recommended Internet Explorer 9 or below is not supported

 Web Portal Requirements - Browser Plugins:
 EarthTrack™ does not require any plugins

Data: Data is stored in secure, encrypted cloud infrastructure

Security: Access is secured with SSL certificates and 256bit SHA encryption

Data Integrity: Dual backups are employed with hourly, daily and weekly backup policies

Access Control: Tested to 1000 users (pin number and card access)

Checklist - Maximum Questions: Total of 40 in any Category. Categories are created by users - e.g. Gas Forklift, Battery Forklift, Diesel Forklift

Checklist - Run Times: Configurable to run up to three times per day

EarthTrack™ - Number of Users: Unlimited

EarthTrack™ - Reports: Available for Daily, Weekly, and Monthly email delivery; or run manually at any time

 ${\sf EarthTrack}^{\scriptscriptstyle{\mathsf{TM}}} \text{ - Alerts:} \quad \mathsf{Immediate email delivery}$

Supported Languages - Website: Chinese, English, French, German, Russian, Spanish

Supported Languages - Operator Display: Arabic, Chinese, English, Estonian, Filipino, French, German, Hindi, Indonesian, Khmer, Korean, Latvian,

Russian, Spanish, Thai, Ukrainian, Vietnamese

OPERATOR DISPLAY

Type: LCD TFT, 480 x 272 pixels

Dimensions: Length: 142mm (5.6") | Width: 98mm (3.85") | Height: 49mm (1.9")

Weight: 430g (0.95lbs)

Operating Temperature Range: -20°C (-4°F) to 60°C (140°F)

Connection Types: Industrial M12 / 5Pin

IP Rating: IP65

CONTROL UNIT

Dimensions: Length: 135mm (5.3") | Width: 115mm (4.5") | Height: 35mm (1.4")

Weight: 300g (0.66lbs)

IP Rating: IP65

Mounting: Attachment via two 7mm mounting holes

Input Voltage: Operating 12-48V

Standby Current Draw: 0.5mA

Operating Current Draw: 6A Max

Operating Temperature Change: -20°C (-4°F)

Connection Types: AMP Superseal 1.0mm

Deutsch DT and DTM

Number of Inputs: 8 Digital / Frequency / Analogue

Number of Outputs: 8 Digital outputs 12V @ 400mA

Circuit Protection: Short circuit and over-current protected