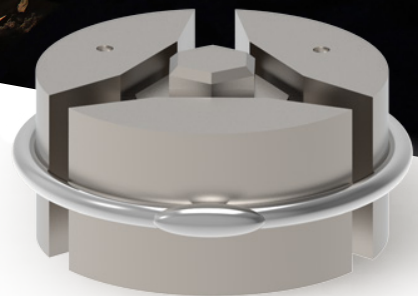




USAR operations require advanced technology to quickly find disaster victims. Dytran by HBK accelerometers offer precise seismic detection, boosting rescue success rates for first responders.



WHITE PAPER

Enhancing urban search and rescue capabilities with high-sensitivity accelerometers

REVOLUTIONISING USAR EQUIPMENT FOR LIFE-SAVING PRECISION

Urban Search and Rescue (USAR) operations demand state-of-the-art technology to swiftly and accurately locate victims trapped in disaster scenarios.

Dytran high-sensitivity accelerometers provide the precision and reliability required for effective seismic detection, helping first responders increase the success rate of rescues.

THE CHALLENGE: ENHANCING DETECTION IN DISASTER ENVIRONMENTS

USAR teams operate in chaotic environments filled with debris and unstable structures where every minute counts.

Traditional detection methods often struggle to capture the faintest signs of life, with success rates dropping dramatically after the critical 72-hour window.

To overcome these challenges, rescue teams require ultra-sensitive seismic sensors capable of detecting minute vibrations from trapped victims—even through metres of concrete and steel.

“RESCUE REQUIRES ULTRA-SENSITIVE SEISMIC SENSORS CAPABLE OF DETECTING MINUTE VIBRATIONS FROM TRAPPED VICTIMS

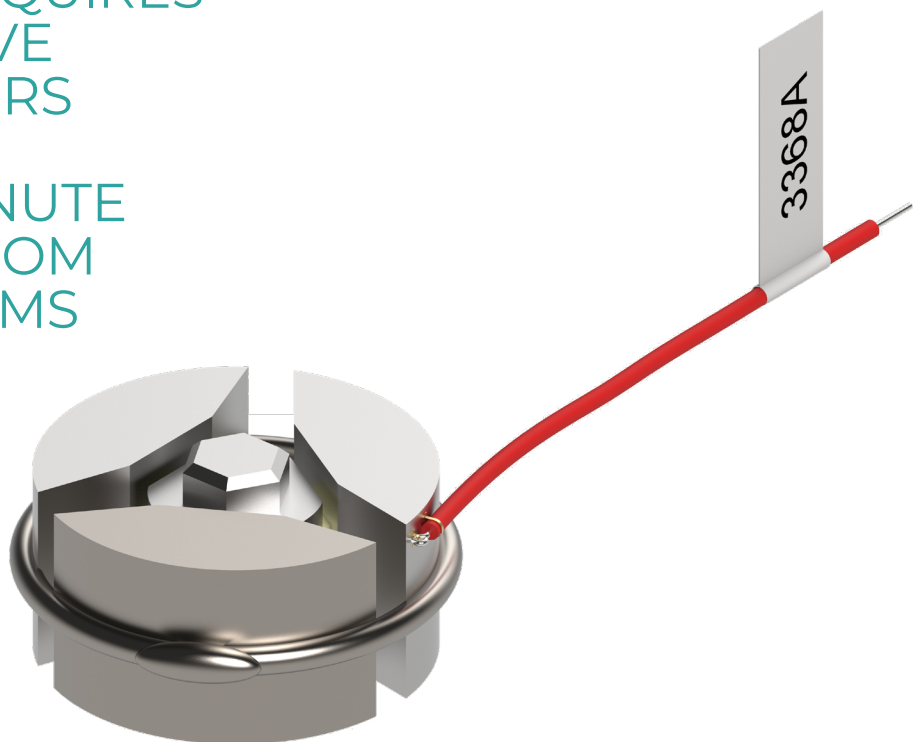
DYTRAN HIGH-SENSITIVITY ACCELEROMETERS: THE GAME CHANGER

Dytran Model 3368A high-sensitivity accelerometers offer an advanced solution for seismic and acoustic sensing in USAR operations.

This accelerometer is designed to capture micro-vibrations and seismic signals with unparalleled precision, allowing rescuers to locate victims faster and with greater accuracy in even the most challenging conditions.

Key Features and Benefits

- **Ultra-high sensitivity:** Detects minute seismic activity and low-frequency vibrations from trapped victims
- **Unmatched accuracy:** High sensitivity and frequency response allow for accurate signal representation and capture
- **Robust and reliable:** The device contains no electronics and thus suitable for extended temperature use
- **Real-time responsiveness:** Enables rapid signal transmission and analysis within milliseconds, allowing immediate action by rescue teams
- **Seamless integration:** Straightforward connection requiring the user to integrate a simple charge amplifier schematic into their design



INTEGRATION INTO USAR EQUIPMENT

Dytran high-sensitivity accelerometers are integrated into advanced seismic detection systems deployed by USAR teams.

These systems employ an array of sensors strategically positioned around the disaster site to detect vibrations. The accelerometers convert seismic activity into electrical signals, processed through sophisticated triangulation algorithms to pinpoint victims' locations with unprecedented accuracy.

- **Seismic sensors deployment:** Multiple Dytran high-sensitivity accelerometers are placed strategically around the search area in a grid pattern for optimal coverage
- **Vibration detection:** The accelerometers capture micro-movements, even subtle breathing or tapping sounds through dense materials
- **Data conversion and analysis:** Signals are converted into real-time data to determine exact victim locations through sophisticated triangulation
- **Rescue execution:** With precise victim positioning, first responders can act swiftly, maximising survival chances and minimising additional structural risks

WHY USAR EQUIPMENT MANUFACTURERS SHOULD CHOOSE DYTRAN

Manufacturers looking to enhance their USAR solutions gain significant advantages by integrating Dytran high-sensitivity accelerometers:

- **Superior detection capabilities:** Provides best-in-class seismic sensitivity for life-saving accuracy
- **Market differentiation:** Positions equipment manufacturers as leaders in USAR innovation with technology trusted by elite rescue teams worldwide
- **Proven reliability:** Trusted performance under the most extreme rescue conditions
- **Customisable and scalable:** Designed for seamless integration into various USAR technologies with comprehensive technical support and integration documentation
- **Cost-effective solution:** Despite superior performance, Dytran accelerometers offer a lower total cost of ownership through durability, minimal maintenance, and reduced deployment time

PARTNER WITH DYTRAN FOR NEXT-GENERATION USAR SOLUTIONS

For USAR equipment manufacturers aiming to lead in life-saving technology, the integration of Dytran's high-sensitivity accelerometers represents a transformative advancement.

By providing unparalleled sensitivity, precision, and reliability, Dytran equips first responders with the tools necessary to save lives efficiently and effectively when every second counts.

Contact us today to explore how Dytran can enhance your rescue solutions and arrange a live demonstration of our technology.