MSES consultants, inc.

Corrosion Products Division

COMBINATION CLOSE INTERVAL SURVEY AND GPS BACKPACK SYSTEM

CIS/GPS PACK MODEL CS-100

The Combination Close Interval Survey and GPS Backpack System - The CIS/GPS Pack Model CS-100 combines the Trimble GPS Path Finder Pro XRS Equipment and Backpack with the American Innovations Allegro CS Field Computer and MSES Corrosion Products Division Close Interval Survey Wire Tray, Pulsed Survey Wire Chainer, and Survey Meter Tray.

The Combination Close Interval Survey and GPS Backpack Systems consists of five (5) elements that when combined form a complete survey system. These five (5) elements are the Trimble GPS Path Finder Pro XRS Backpack supplied by Trimble. The Allegro CX Field Computer supplied by American Innovation. These two (2) elements are interconnected by the MSES Corrosion Products Division's Survey Wire Tray, Pulsed Survey Wire Chainer, and the Survey Meter Tray.

The total system weight is just 8.5 lbs, which does not include the survey wire spool, GPS Receiver/Antenna, Batteries, Cables and Antenna pole; and American Innovation's Allegro CX Field Computer.

The Combination Close Interval Survey and GPS Backpack System provide the platform for a CIS Survey, GPS Location Survey, and Field Data Collections from a single integrated system. The Combination Close Interval Survey and GPS Backpack system can also be used independently for CIS Surveys, Annual Reads, or as a GPS Survey Unit.

TRIMBLE GPS PATH FINDER PRO XRS BACKPACK

Backpack	The Trimble Backpack provides a comfortable backpack to carry the GPS receiver/antenna, batteries, antenna pole, and connecting cable. The Trimble Backpack is provided to MSES Corrosion Products Division (CPD) by the customer for modification to accept the Survey Wire Tray, Pulsed Survey Wire Chainer, and Survey Meter Tray.
Backpack Modifications	The Trimble Backpack's internal metal frame is strengthened and aluminum supports added to receive the MSES CPD's Survey Wire Tray. An upper and lower hinge and quick release fastener system is added to the strengthened backpack's internal metal frame.
GPS Equipment	The interior of the Trimble Backpack is unchanged with battery pockets, placement of batteries, installation of the GPS Receiver, and the interconnections of the batteries and antenna cable as outlined by the GPS Path Finder System User Guide. Finally, the placement of the antenna pole and antenna is also unchanged with these items installation and use outlined by the User Guide.

SURVEY WIRE TRAY AND PULSED WIRE CHAINER

SURVEY WIRE TRAY SPECIFICATIONS

Dimension	The "L" shaped wire tray provides a 6.75 inch long survey wire spool tray and a 17.25 inch high back plate
Weight	2 lbs 11 oz

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SURVEY WIRE TRAY AND PULSED WIRE CHAINER (continued)

SURVEY WIRE TRAY SPECIFICATIONS (continued)

Survey Wire Tray	Lightweight UHMW high-dielectric plastic, back-mounted survey wire tray equipped with pre-wired 5/8 inch arbor.
Assembly	Fully wired to connect the survey wire and wire chainer to the Allegro CS Field Computer.
Hinge System	A total fastener system consisting of two (2) plain finish aluminum plates with raised knuckles to interlock the two (2) plates. The connecting pin is a steel, zinc-plated load rated quick release pin.
Load Rating	The survey wire tray is load rated to accept 1 mile, 1.5 miles and 5 mile spools of #30 awg, #32 awg or #34 awg survey wire.

SURVEY WIRE CHAINER SPECIFICATIONS

Dimension	3.62 inches long, 1.5 inches wide, and 1.21 inches high
Mounting	Mounted to the survey wire tray center bar
Weight	5 oz
Case	Die-cast Aluminum
Survey Wire	The Wire Chainer can accept coated #30 awg, #32 awg, and #34 awg survey wire.
Pulse	The Wire Chainer provides an electronic pulse to the data collector's software.
Pulse Output Port	Female pulse output jack-subminiature phone jack; 2 conductor; CLSD circuit; plug 850, 880; accepts a 2.5 mm male jack plug
Data Collector/Meter Compatibility	The Wire Chainer will interface with American Innovation's Allegro CX (Bass-Trigon Pipeline Compliance Software and Allegro Field Computer).
Power	No power source needed to operate the Wire Chainer

SURVEY METER TRAY SPECIFICATIONS

Dimensions	11.5 inches long and 6.5 inches wide shaped to accept the Allegro CX Field Computer
Weight	2 lbs.
Meter Tray	Lightweight UHMW high-dielectric plastic survey tray with stainless steel corner connector rings.
Mounting	SECO type data collector cradle assembly to accept the Allegro CX Field Computer.
Splitter Box	Constructed of high-impact strength polystyrene plastic mounted to the underneath of the survey meter tray.

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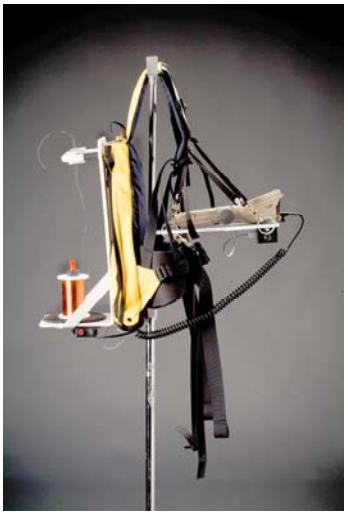
SURVEY METER TRAY SPECIFICATIONS (continued)

Straps	Waist straps are used to stabilize the survey meter tray and hook to the back connector rings of the survey meter tray and to the Trimble Backpack waist band or the surveyor's belt loops. The front straps connect to the Survey Meter Tray's front connector rings. This high performance suspension system adjusts to accommodate virtually any size surveyor even with bulky cold weather gear. The front straps connect to the Trimble Pack's shoulder straps with strong, quick-release snap connectors.
Strap Connections	The connecting straps use a stainless steel trigger snap for quick connect and disconnect with survey meter tray's corner connector rings.
Set-up	The survey meter tray is fully wired and ready to use. Survey test/data probes can be connected to the splitter box's 3-PIN female plugs (right probe to the right plug and left probe to the left plug). Data lead wire with 3-Pin jack connects to the data collector/meter remote trigger port.
Contact Information	**For More Information:** Jason Rine P. O. Drawer 190 Clarksburg, WV 26302-0190 Toll free 877.624.9700 Fax 304.622-0981 E-mail j.rine@msesinc.com www.msesproducts.com



FEATURES

- Lightweight
- Rugged Construction
- Ergonomic Design
- Modified to accommodate surveyor's requirements.
- Survey Meter Tray and Survey Wire Tray constructed of extremely high-abrasive and impact-resistant UHMW plastic.
- Survey Meter Tray provided a stable platform for data collector along with survey test probe ports.
- Backpack and Survey Meter Tray straps are adjustable to fit any surveyor.
- Fully self-contained and pre-wired interconnecting the Allegro CX Field Computer and the Trimble GPS System making the system ready for use.

Data Collector and Wire Spool not supplied.
Trimble Backpack provided by customers