Leica Digisystem i-Series

Safe and fast location of underground utilities

Leica Digisystem i-Series

Making cable avoidance easier and safer

Every year site workers are injured due to inadvertently striking buried utilities such as electricity cables or gas pipelines. Obtaining accurate information about the location of buried utilities has never been more essential to protect employees and equipment during any excavation project.

Local legislation prescribes the use of a locating device before any kind of excavation takes place. It makes perfect sense to search for, trace and mark all utilities before work commences.

The Digisystem enables users to detect buried utilities with ease. The range has been specifically designed to reduce human error and to increase site safety with its wealth of intelligent and unique features.

Typical users of the Digisystem:

- Excavation contractors
- Utility installation & repair contractors
- General contractors
- Builders
- Gas & electricity companies
- Cable TV companies
- Pipe laying contractors

The Digisystem is comprised of:

- Digicat 500i/550i, 600i/650i & 700i/750i locators
- Digitex 100t & 300t signal transmitters
- Digitrace and additional accessories
- LOGiCAT software

The Digisystem range makes locating underground cables and pipes a simple and efficient task, increasing your on-site safety and ultimately saving you time and money.

How does the Digicat locate?
The Digicat range locates buried conductive utilities by receiving electromagnetic signals which radiate from them.

The Digicat's intelligent software interprets the signal data and provides the operator with an audible and visual response to the location and direction of buried utilities. The operator can mark the ground or use a GIS mapping device* to note the location, providing the excavation team with clear indications of utility positions.

* on Digicat models with Bluetooth® functionality

Leica Digicat benefits:

- State-of-the-art Digital Signal Processing (DSP) technology
- Automatic controls – making the Digicat easy-to-use, requiring minimal user experience
- Power mode start-up ensuring the most potentially dangerous current carrying utilities are detected first
- Hazard Zone feature indicating shallow buried utility in power, 8 and 33 kHz modes, (within approximately 30 cm) alerting increased risk
- Built-in test function for testing hardware and software
- LCD screen with built-in light sensor, automatically enabling the backlight in dark conditions
- Robust, lightweight design, specifically engineered for tough site conditions
- Service Due Indicator supporting planned maintenance schedules or quality systems by displaying a wrench icon after 12 months

The Digicat i-Series locators have multiple modes of operation allowing users to have maximum control at their fingertips.

Auto Mode
Automatically locates power or radio signals, helping to confirm the presence of utilities upon initial site occupation making cable detection easier and safer.

Power Mode (Default mode)
Locates power signals radiated by energised cables which pose the most significant risk to excavation teams.

Radio Mode
Traces signals originating from distant radio transmitters. These signals penetrate the ground and are reradiated by buried conductive utilities.

Transmitter Modes (8 & 33 kHz)
Locates a specific signal applied by the Digitex dual frequency signal transmitter to a metallic underground conductor.

Leica Digicat i-Series
High level intelligence

Depth Indication
The Digicat 550i, 650i & 750i all feature utility depth indication, when used in conjunction with the Digitex signal transmitter or Digimouse Standard Sonde, in 8 or 33 kHz modes. With a single press of the button operators are provided with the approximate depth of the buried utility.

Hazard Zone
Buried utilities close to the surface pose a significant safety risk to site works. The Hazard Zone function provides an additional warning to the close proximity of buried utilities, alerting users to the immediate danger.

Enhanced Sonde Detection
The Digicat i-Series feature numeric signal strength readout, specifically designed for easy sonde location. The highest number displayed indicates the exact position of the Digimouse Standard Sonde beneath the ground.

Service Due Indicator
Supporting customer planned maintenance schedules or quality systems,

PinPoint Assist
Maintains the highest peak reading obtained on the signal strength indicator for a period of time, allowing the operator to swiftly and accurately pinpoint the utility position.

Additional features Digicat 600i & 700i i-Series only

Data Logging
The Digicat 600 and 700 i-Series locators record and stores information while in use. Information is recorded every second after completion of the initial start-up routine. These records are stored in the locators memory and can be retrieved and transferred via Bluetooth® to a PC, tablet or mobile

LOGiCAT Software*
Allows you to upload the stored records to view the locators use, simply upload all records or search by date.

Bluetooth® Connectivity
The Digicat 600 and 700 i-Series locators have the added benefit of Bluetooth® wireless connectivity. It allows the Digicat to integrate seamlessly with mobile mapping technology to log survey data, in addition to enabling wireless Bluetooth® data transfer.

Additional feature Digicat 700 i-Series only

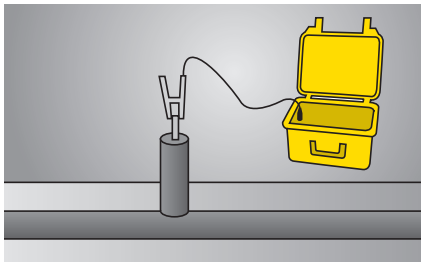
Integrated GPS Technology
Capturing the data on where the locator has been used. The data is easy to download from the locator to your PC, tablet or mobile phone via Bluetooth® connectivity and using LOGiCAT software. The location information is then displayed visually on an easy to understand map, providing increased confidence in locating results because of greater traceability and visibility of use.

software compatibility, see page 6.

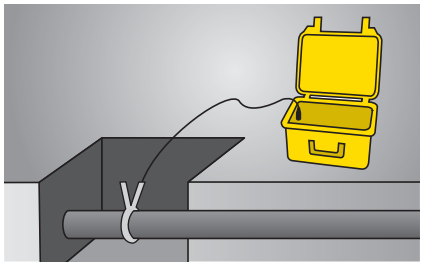
Leica Digitex Signal Transmitters

Leica Digitex signal transmitters deliver significantly higher power than previous models. This improved performance will allow users to:

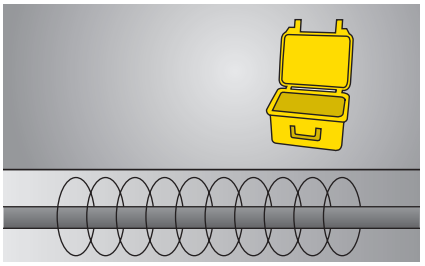
- Trace utilities over a greater distance
- Improve utility detection in areas of high signal interference
- Improve depth estimation when using a depth locator



Direct Connection
Connect the Digitex to a conductive utility such as a valve, stop tap or other access point.



Signal Clamp Connection
A signal clamp is used to apply the Digitex signal to a pipe or live electricity cable. Supply is not interrupted by the signal and the operator is not exposed to any live utility.



Induction
The Digitex induces a tracing signal into the buried pipe or cable. This is a quick and convenient method when direct connection or signal clamping is not possible.

Features	Digitex 100t Article no. 795946	Digitex 300t Article no. 798651
8 kHz Mode	8.192 kHz	8.192 kHz
33 kHz Mode	32.768 kHz	32.768 kHz
Mixed 8/33	8.192 kHz/32.768 kHz	8.192 kHz/32.768 kHz
Induction (Max)	Up to 1W max	Up to 1W max
Direct connection (300 Ohms)	Up to 1W max when connected to a buried utility with an impedance of 300 Ohms	Up to 3W max when connected to a buried utility with an impedance of 300 Ohms
Protection (case lid closed)	IP67	IP67
Working temperature	–20°C to +50°C	–20°C to +50°C
Battery type	4 x D alkaline (IEC LR20), supplied	4 x D alkaline (IEC LR20), supplied
Battery life (typical use at 20°C)	30hrs intermittent use	20hrs intermittent use
Weight	2.5kg/5.5lbs including batteries	2.5kg/5.5lbs including batteries
Dimensions	113mm (H) x 206mm (D) x 250mm (W)	113mm (H) x 206mm (D) x 250mm (W)
Extended self test	Induction and Connection Modes	Induction and Connection Modes
Power output levels	4	4

LOGiCAT Software

Simply upload stored records

LOGiCAT software allows you to upload stored records from the Digicat 600i and 700i Series locators. To view the locators use, simply upload all records or search by date. Upload information includes:

Time and Date
Identifies when and at what time ground surveys were conducted.

Usage Duration
Determines how long survey teams searched for buried utilities and reveals actual product utilisation.

User Identification
Forces users to become accountable for their actions and identifies those who need additional product training.

Detection Mode
Allows managers to judge the quality and thoroughness of work. As more comprehensive ground surveys are conducted the locator records the mode of operation including the use of a signal transmitter.

Utility Detection
Discovers quickly if any buried utilities were detected during surveys and even determines the signal strength shown on the locator.

Product Fleet Management
Displays and monitors the service and calibration dates of your locator fleet, ensuring they are kept in perfect working order and not being used when calibration is due.

Diagnostic Check
Displays locators which have failed the EST (Extended Self Test) and removes them from the active fleet for immediate repair. This reduces the possibility of defective equipment being used on-site.

Management Reports
Produces basic statistical reports from the logged data, allowing users to see how products are utilised and how ground survey teams are using them on-site.

Integrated GPS Technology*
Provides information on where the locator has been used and when downloaded into LOGiCAT the data is displayed visually in an easy to understand map.

LOGiCAT Software Art. No. 795945

* Only available on Digicat 750i

Digisystem Accessories

Signal Clamp (33kHz)
100 mm clamp used in conjunction with the Digitex signal transmitter, with a 33 kHz output, to apply a traceable signal to conductive buried utilities such as cables or pipes.

Property Connection Set
For use with the Digitex signal transmitter.

Connection of a tracing signal to any internal power distribution system

Digimouse Standard Sonde (8 kHz & 33 kHz)
Compact dual frequency sonde used to trace drains, sewers and other non-conductive utilities. Digimouse can be attached to a range of equipment including drain rods, boring tools and inspection

battery, with a depth range of 5 metres.

Leica Digisystem i-Series

Excellent customer support, service and training

Technical Support
Users of the Digisystem have easy access to technical support, should it be required. Front line technical support for all tools is provided from experienced professionals at your local dealer or your nearest Leica Geosystems representative.

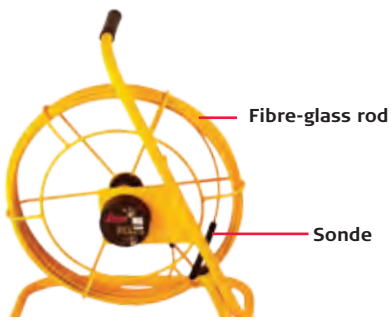
Service & Repair
Leica Geosystems strongly recommend that the tools are regularly serviced and calibrated every 12 months in an authorised Leica Geosystems service centre or dealer workshop. The repair costs and turnaround times for Digisystem products are highly competitive.

Training
Operator training for the Digisystem is available from our own qualified trainers, or via our approved dealers.

Features	Digicat 500i (Art. No. 50 Hz 780225/ 60 Hz 780226)	Digicat 550i (Art. No. 50 Hz 780231/ 60 Hz 780232)	Digicat 600i (Art. No. 50 Hz 795939/ 60 Hz 795940)	Digicat 650i (Art. No. 50 Hz 795941/ 60 Hz 795944)	Digicat 700i (Art. No. 50 Hz 821246/ 60 Hz 821247)	Digicat 750i (Art. No. 50 Hz 821248/ 60 Hz 821251)
Frequency / Mode	Power mode 50 Hz or 60 Hz, Radio mode 15 kHz to 60 kHz, Transmitter mode 8 kHz and 33 kHz, Auto mode = Power + Radio mode					
Depth detection (typical)	Power to 3m, Radio to 2m, Transmitter mode dependant on signal transmitter or sonde					
Protection	Conforms to IP54					
Batteries	6 x AA alkaline (IEC LR6), supplied					
Battery life	40 hours intermittent use (at 20°C)					
Weight	2.7kg including batteries					
Depth estimation	Not available	10% of depth in line or sonde (0.3 to 3m depth range)	Not available	10% of depth in line or sonde (0.3 to 3m depth range)	Not available	10% of depth in line or sonde (0.3 to 3m depth range)
Bluetooth®	Not available	Not available	Enabled	Enabled	Enabled	Enabled
Compatibility	Not available	Not available	CSV file compatibility program			
Memory size	Not available	Not available	32MB memory	32MB memory	64MB memory	64MB memory
GIS mapping capability			X	X	X	X
Integrated GPS technology					X	X
GPS type*					Chipset: u-blox®GPS, Technical Data; Type: L1 frequency, C/A code	
GPS accuracy**					2.5 m CEP, SBAS 2.0 m CEP	
GPS start time					Cold 34 s typical, Warm 34 s typical, Hot 1 s typical	

* All data/information according to Manufacturer u-blox®GPS; Leica Geosystems does not assume any liability whatsoever for such information
** Accuracy is dependent upon various factors including atmospheric conditions, multipath, obstructions, signal geometry and number of tracked satellites

Digisystem Accessories



The Digitrace enables a complete length of non-metallic drains, duct or pipes to be traced when used in conjunction with the Digicat and the Digitex (or other signal transmitters).

The Digitrace coiled fibre-glass rod, which protects the central copper tracing conductor, is available in lengths of

The fibre-glass rod is inserted and pushed along in the utility under investigation. The Digitex is connected and the tracing signal is located on the surface by the Digicat.