DANGER BURIED GAS MAIN BELOW

Locate Plastic
Pipe & Conduit

3M™ Electronic Marking System (EMS) Caution Tape 7600 Series
3M™ Dynatel™ Cable/Pipe/Fault/EMS Tape Locators 7000 Series

3M

3M™ EMS (Electronic Marking System) Caution Tape 7600 Series
3M™ Dynatel™ Cable/Pipe/Fault/EMS Tape Locators 7000 Series

Introducing 3M's Next Generation of Underground Infrastructure Asset Management

A Revolutionary Approach to Locating Plastic Pipes/Conduit Path

3M has over 30 years experience developing new and innovative solutions for locating buried assets. 3M pioneered electronic marker technology with EMS markers and programmable ID markers and continues to set the standard for innovation with its newest path marking technology.

Now, 3M has developed an effective way to locate the path of underground plastic pipes and conduits, eliminating the need, problems and costs associated with tracer wire and test stations.
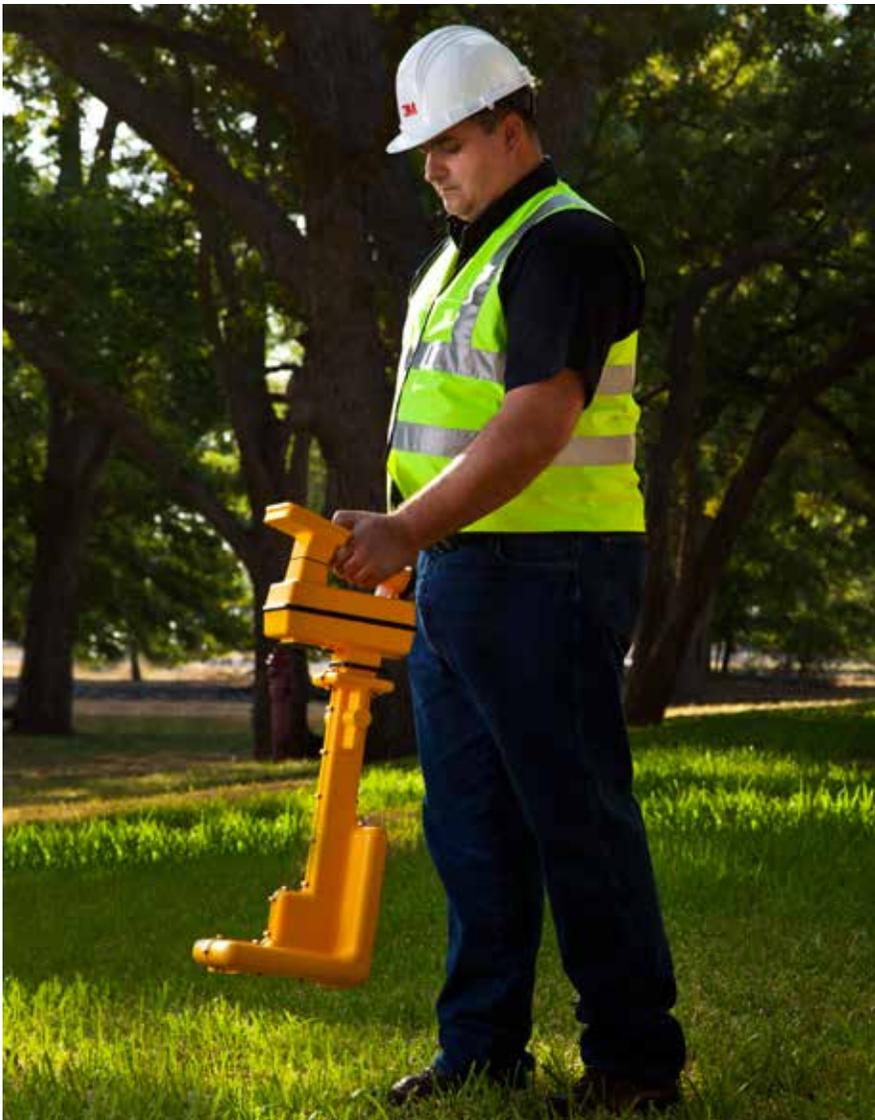
System Benefits

- Eliminates need to install tracer wire
- No access points or connections required
- Locate without the need of a transmitter
- Unique identification for each utility type
- Low installed costs
- Tape does not provide a path for lightning
- Signal path maintained even if the tape is cut or damaged
- Product design life — 50 years

EMS Caution Tape for Path Marking

3M™ Electronic Marking System Caution Tape uses a new EMS marker technology embedded into a caution tape for installation near or above the buried facility and helps provide continuous path location. When energized using a 3M™ Dynatel™ Locator 7000 Series, the markers are activated. The markers require no batteries, and there is no need to hook up an external transmitter or search for access points.

The markers work independently, so even if a section of caution tape is cut or removed, the other markers on the tape would continue to provide accurate location.

Each version of 3M™ EMS Caution Tape is tuned to a frequency specific to the path of that utility (gas, telco, or wastewater) and can be buried up to two feet (.76 m).

EMS Electronic Markers for Point Marking

3M™ EMS Caution Tape for path marking is a perfect complement to 3M's existing line of EMS passive and ID markers (Near Surface, Ball and Full Range markers) which are used for marking points of interest, such as splices, service drops, valves, etc.

ID markers can be programmed to include specific information such as facility data, type of application, placement date and other important details.

3M™ Electronic Marking System (EMS) Caution Tape 7600 Series

3M™ ID Ball Markers

3M™ Electronic Marker Specifications

	Telephone	Power	CATV	General Purpose	Water	Wastewater	Gas	Read Range*
Color	orange	red	black/orange	purple	blue	green	yellow	n/a
ID Ball Marker	1421-XR/ID	1422-XR/ID	1427-XR/ID	1428-XR/ID	1423-XR/ID	1424-XR/ID	1425-XR/ID	5 ft. (1.5 m)
ID Near-Surface	1432-XR/ID	1433-XR/ID	1437-XR/ID	1438-XR/ID	1434-XR/ID	1435-XR/ID	1436-XR/ID	3 ft. (0.9 m)
ID Full-Range	1250-XR/ID	1251-XR/ID	N/A	1248-XR/ID	1252-XR/ID	1253-XR/ID	1254-XR/ID	8 ft. (2.4 m)
Non-ID Ball Marker XR	1401-XR	1402-XR	1407-XR	1408-XR	1403-XR	1404-XR	1405-XR	6 ft. (1.8 m)
Near-Surface Marker	1432	1433	N/A	N/A	1434	1435	1436	3 ft. (0.9 m)
Mini-Marker	1255	1256	N/A	N/A	1257	1258	1259	7 ft. (2.1 m)
Full-Range	1250	1251	N/A	N/A	1252	1253	1254	9 ft. (2.7 m)

*Read range specifies maximum distance from locator probe using 3M™ Dynatel™ Locator 7000 Series. Read range may vary on export models–refer to product bulletins. Some countries do not allow all marker operating frequencies.

3M™ EMS Caution Tape 7600 Series Specifications

Description:	6 Mil PE film with 3M Markers for locating
Part Number:	7600 Series
Tape Material:	Polyethylene
Color(s):	Yellow, Orange, Green
Gauge(s):	6 Mil (+/- 10%)
Roll Width(s):	6" (0.15 m)
Roll Length:	1,312 ft. (400 m)
Density*:	.920 g/cc (6.0 Mil)
Tensile at Break (psi) / (with markers attached)*:	MD 1307 (+/- 5%) TD 377 (+/- 5%)
Elongation (%)*:	MD 7.8
	TD 12.7
Tear Strength (g)*:	MD 440
	TD 1200
Physical Specifications:	
Weight(s):	22 lbs. @ 4" wide
	44 lbs. @ 6" wide
Spool size: 6" wide	19.5 in. (.5 m) dia. x 12 in. (.3 m)
Spool hole:	3.0 dia in
Environmental Specifications:	
Operating temperature	-4° F to 122° F (-20° C to 50° C)
Storage temperature	-4° F to 149° F (-20° C to 65° C)
Compatibility:	
3M™ Dynatel™ 7400 and 7500 Series Locators	
Maximum Burial Depth:**	
7600 Series Tape	2.0 ft. (.61 m) (maximum)**

* Based on average production
** Using 3M™ Dynatel™ 7000 Series Locators

3M™ Electronic Marking System (EMS) Caution Tape 7600 Series

Ordering Information

Product Number	Product Description	3M ID
7605-XR-CT-GAS	EMS Tape 6", 400 m roll, English	80-6116-1196-5
7604-XR-CT-WW	EMS Tape 6", 400 m roll, English	80-6116-1198-1
7601-XR-CT-TEL	EMS Tape 6", 400 m roll, English	80-6116-1195-7

3M™ Dynatel™ Locators 7000 Series

Marker Tape/Locator 7420

Based on existing Dynatel technology platform, the new 7420 locator will allow the user to locate EMS Caution Tape and existing electronic markers (balls, near-surface, full range, etc.). In addition, the locator will read/write to 3M ID markers. It is as easy as selecting "path" marker locating for EMS Caution Tape or "ID/EMS" for point marker locating. The push of one button will provide the depth to any of the underground marking solutions.

Pipe/Cable/EMS Locators 7550-ID
Pipe/Cable/Fault/EMS Locators 7573-ID

3M™ Dynatel™ locators 7500 series offer a broad feature set with advanced digital processing and simple interfaces with precision locating capabilities. The new 7500 series locators will allow the user to locate EMS Caution Tape and existing electronic markers (balls, near-surface, full range, etc.). In addition, all 7500 series locators will read/write to 3M ID markers. All 7500 series locators offer six active frequencies and transmitter output options in 3, 5 or 12 watts providing a solution for virtually all challenging applications encountered in the field.

As with all 3M Dynatel Cable/Pipe Locators, the 7500 series provides accurate pipe, cable, or Sonde depth measurements, giving a digital readout in feet and inches, or centimeters (user-selectable). All 7500 series locators and fault finders are also compatible with select GPS/GIS field mapping instruments for real time mapping of electronic markers or pipe and cable facilities. Other user friendly features include the ability to enable or disable receiver frequencies and the ability to select audio sounds in the simple menu driven interface.

A Reputation of Excellence

When you choose a quality 3M™ Dynatel™ Locator, you get outstanding performance and reliability, along with toll-free technical phone support and a service center dedicated to excellence. Our service center provides calibration, repair, upgrades and modifications for safety, performance and reliability.

3M™ Dynatel™ Cable/Pipe/Fault/EMS Locator 7500 Series

Product Features

- 6 active frequencies for direct connect
- 4 induction frequencies with maximum allowed output power
- Trace view mapping display
- Push button depth to all underground markers (passive and ID)
- Receiver rechargeable battery kit
- All frequency mode in direct connect (4 simultaneously)
- Automatic impedance matching
- Ohm meter with high voltage detection
- Rugged, industrial temperature range
- 240VAC output protection

New features in the 3M™ Dynatel™ 7500 Series Locators include EMS Caution Tape Locating and EMS alert which allows the user to locate EMS Caution Tape and at the same time be alerted to electronic markers of the same utility.

3M™ Dynatel™ Cable/Pipe/Fault/EMS Locator 7500 Series

3M™ Dynatel™ Locators and Fault finders 7500 Series Ordering Information

Stock No.		US Version Locators	Cable/Pipe Locate	Earth Return Fault Locate	3M Passive/ID & Caution Tape Marker Locate	Transmitter Output	Direct Connect Cable - large clips	Direct Connect Cable - small clips	Coupler Size	Coupler Cable	2200RB Rechargeable Battery	A-Frame/A-Frame Cable	Ground Rod	Carrying Bag	Cigarette Lighter Adapter
8066113-8923-2	7420	EMS Marker/Tape Locator/Read/Write			■										
80-6300-0271-7	7550-ID/U3	Pipe/Cable/EMS Lctr Util 4.5" Cplr 3W	■		■	3W	■		4.5"	■			■	■	
80-6300-0272-5	7550-ID/U5	Pipe/Cable/EMS Lctr Util 4.5" Cplr 5W	■		■	5W	■		4.5"	■	■		■	■	■
80-6300-0273-3	7550-ID/U12	Pipe/Cable/EMS Lctr Util 4.5" Cplr 12W	■		■	12W	■		4.5"	■	■		■	■	■
80-6300-0274-1	7550-ID/5-NA	Pipe/Cable/EMS Lctr 5W (No accys)	■		■	5W							■		
80-6300-0275-8	7573-ID/U3	Pipe/Cable/Fault/EMS Lctr Util 4.5" Cplr 3W	■	■	■	3W	■		4.5"	■		■	■	■	
80-6300-0276-6	7573-ID/U5	Pipe/Cable/Fault/EMS Lctr Util 4.5" Cplr 5W	■	■	■	5W	■		4.5"	■	■	■	■	■	■
80-6300-0277-4	7573-ID/U12	Pipe/Cable/Fault/EMS Lctr Util 4.5" Cplr 12W	■	■	■	12W	■		4.5"	■	■	■	■	■	■
80-6300-0278-2	7573-ID/C3	Cable/Pipe/Fault/EMS Lctr Com 3" Cplr 3W	■	■	■	3W		■	3"	■		■	■	■	
80-6300-0279-0	7573-ID/C5	Cable/Pipe/Fault/EMS Lctr Com 3" Cplr 5W	■	■	■	5W		■	3"	■	■	■	■	■	■
80-6300-0280-8	7573-ID/C12	Cable/Pipe/Fault/EMS Lctr Com 3" Cplr 12W	■	■	■	12W		■	3"	■	■	■	■	■	■
80-6300-0281-6	7573-ID/5-NA	Pipe/Cable/Fault/EMS Lctr 5W (No accys)	■	■	■	5W							■		
80-6300-0324-4	7550-ID/UR	Cable/Pipe/EMS Receiver Only	■		■										
80-6300-0326-9	7573-ID/UR	Cable/Pipe/Fault/EMS Receiver Only	■	■											
Stock No.		**Export Version Locators**													
80-6113-8924-0	7420-E	EMS Marker/Tape Loctator/Read/Write			■										
80-6300-0295-6	7550E-ID/CU5	Cable/Pipe/EMS Lctr Com/Util 3" Cplr 5W	■	■	■	5W	■	■	3"	■	■		■	■	■
80-6300-0296-4	7550E-ID/CU12	Cable/Pipe/EMS Lctr Com/Util 3" Cplr 12W	■	■	■	12W	■	■	3"	■	■		■	■	■
80-6300-0297-2	7573E-ID/CU5	Cable/Pipe/Fault/EMS Lctr Com/Util 3" Cplr 5W	■	■	■	5W	■	■	3"	■	■	■	■	■	■
80-6300-0298-0	7573E-ID/CU12	Cable/Pipe/Fault/EMS Lctr Com/Util 3" Cplr 12W	■	■	■	12W	■	■	3"	■	■	■	■	■	■
80-6300-0325-1	7550E-ID/R	Cable/Pipe/EMS Receiver Only (Export)	■	■	■										
80-6300-0327-7	7573E-ID/R	Cable/Pipe/Fault/EMS Receiver Only (Export)	■	■	■										

Optional/Replacement Accessories

Stock Number	Product Number	Product Description
80610074686	3001	Dyna-Coupler 3-Inch
80610764716	3019	Cable Locator Coupler Accessory Kit 3"
80611325830	4001	Dyna-Coupler 4.5 Inch
80611335201	4519	Locator Coupler Accessory Kit - 4.5"
80610411185	1196	6" Dyna-Coupler W/Pouch
80611312499	1196/C	6" Dyna-Coupler W/Pouch & 9011 Coupler Cable
80610598130	2876	Large Clip Direct-Connect Trnsmtr Cable for Cable/Fault Locators
80610598668	2892	Small Clip Direct-Connect Trnsmtr Cable for Cable/Fault Locators
80610074850	9012	Direct Connect, 5-Foot Transmitter Cable, Telephone
80610074843	9011	Coupler Cable
80610126833	9043	Ground Extension Cable 12'
80611330368	2200M-USB	USB To RS232 Converter For 2200M/1420 Locators
80610074777	3014	Earth Contact Frame
80610074942	9026	Earth Contact Frame Cable
80611146715	2200M/7000	Soft Carrying Bag For 2200M/2500/7000 Series
80611306517	2200/7000RB	Rechargeable Battery for 5W & 12W Units Non-Spillable
80630002535	7000RB	Rechargeable Battery Pack for 7000 Series Rcvr
80610126841	8006	Ground Rod
80610757785	3229	ADP 33 kHz Sonde for Use w/Cable/Fault Locators

3M™ Dynatel™ EMS Marker/Tape Locator 7420/7420E Product Specifications

Physical Specifications:

Locator	Size (H x W x D) IN (CM) 30" x 6.5" x 10.5" (76 x 17 x 27)	Weight (including batteries) 5 lb. (2.25 kg)
Shipping Box	Size (L x W x H) IN (CM) 33" x 17" x 12.5" (84 x 43 x 32)	7 lb. (3.2 kg)

Environmental Specifications:

Operating temperature	-4° F to 122° F (-20° C to 50° C)
Storage temperature	-4° F to 158° F (-20° C to 70° C)
Regulatory	7420 (FCC Part 15), 7420E (CE)
Environmental Standard	IP54

Compatibility:

3M EMS/ID Markers	All 3M markers (telephone, gas, communication, power, water, wastewater and general purpose)
3M EMS 7600 Series Caution Tape	All 3M path marking caution tape (telephone, gas, wastewater)

Range/Depth:

**Write Range
3M ID Markers:**

Near-Surface	6 in. (15 cm)
Ball Marker	12 in. (30 cm)
Full-Range	24 in. (61 cm)

**7420 Read Range
3M ID Markers:**   **(Telephone, Power, Gas, Water, Wastewater, Communications (CATV), General Purpose)[1]**

Near-Surface	3 ft. (0.9 m)
Ball Marker	5 ft. (1.5 m)
Full-Range	8 ft. (2.4 m)

**7420E Read
3M ID Markers:**   **(Telephone, Gas, Wastewater, Water, Communications (CATV), General Purpose)***

Near-Surface	90 cm (36 in.)
Ball Marker	1.5 m (60 in.)
Full-Range	2.4 m (94 in.)

* Some countries do not allow all marker operating frequencies. Refer to the Operator's Manual for more information.

Detection Depth 3M Passive Markers (no ID):

Near-Surface	3 ft. (0.9 m)
Ball Marker	6 ft. (1.8 m)
Mid-Range	7 ft. (2.1 m)
Full-Range	9 ft. (2.75 m)

Maximum Burial Depth

7600 Series Caution Tape	2.0 ft. (.61 m)
Depth measurement accuracy	+/- (10% + 5 cm) or +/- (10% + 2 in.) up to specified depth of marker or caution tape (Depth accuracy susceptible to high ambient noise conditions)

ID Marker Memory Storage:

Memory storage with date/time stamp	Read marker records 100
Written marker records	100
User defined ID templates	32
Marker depth memory storage	Five with date/time stamp

Electrical Specifications:

Power	Rechargeable battery pack (12V2R4A)[2]
Battery life:	8 hours typical[3]
Charging time	2.5 hours, with 90~240V AC adapter
Display	Large graphic high-contrast LCD with backlight
Speaker	0.25 W
Headphone jack	Standard mini phone jack
Serial port	Standard RS232 serial with DB9 connector(RS232 to USB adapter cable included)

Notes:

[1]Some countries do not allow all marker operating frequencies. Refer to configuration section for 7420E instruction manual (Section 4A).
[2]It's recommended to use the rechargeable battery pack. However, a battery holder is provided for using 8-AA size Alkaline batteries for backup, which would have reduced battery life.
[3]The battery life is measured for the 12V2R4 rechargeable battery pack at 73°F/23°C, with 10% usage of the backlight and audio volume at medium level.

3M™ Dynatel™ Pipe/Cable/Fault/EMS Locator 7500 Series Product Specifications

Physical Specifications:

	Size (H x W x D) IN (CM)	Weight (including batteries)
Locator	30" x 6.5" x 10.5" (76 x 17 x 27)	6.4 lb. (2.90 kg)
Shipping Box	Size (L x W x H) IN (CM)	7 lb. (3.2 kg)
	33" x 17" x 12.5" (84 x 43 x 32)	

Environmental Specifications:

Operating temperature	-4° F to 122° F (-20° C to 50° C)
Storage temperature	-4° F to 158° F (-20° C to 70° C)
Regulatory	7550 (FCC Part 15), 7550E (CE)
	7573 (FCC Part 15), 7573E (CE)
Environmental Standard	IP54

7500 Series Receiver Specifications

Power	Rechargeable Li Ion battery pack (12V2R4A)1
Battery Life	8 hours typical2
Charging Time	2.5 hours typical, with 90~240V AC adapter
Display	Large graphic high-contrast LCD with backlight
Speaker	0.25W
Headphone jack	Standard mini phone jack
Serial Port	Standard RS232 serial with DB9 connector
	(RS232 to USB adapter cable included)
Display	LCD
Gain Control	Manual and Automatic
Weight w/batteries	5.0 - 6.4 lbs. (2.3 - 2.9 kg) (model dependent)
Cable/Pipe Depth Accuracy	$\pm2\% \pm 3$ in. (7.6 cm) for 0–60 in. (1.5 m)
	$\pm6\% \pm 3$ in. (7.6 cm) for 60–120 in. (1.5–3.0 m)
	$\pm10\% \pm 3$ in. (7.6 cm) for 120–180 in. (3.0 m–4.5 m)
Cable/Pipe Depth Range	0–360 in. (0–914 cm)

Locate Modes:

Trace View
Directional Peak
Directional Null
Special Peak
Induction Peak

Frequency Response:

Active 7550/7573	577 Hz
	1 kHz
	8 kHz
	33 kHz
	82 kHz
	200 kHz
Active 7550E/7573E International	577 Hz
	1 kHz
	8 kHz
	33 kHz
	82 kHz
	133 kHz
Passive	31.5 kHz (CATV)
	15 – 30 kHz (LF)
Power	50 Hz, 5th and 9th harmonic of 50 Hz
	60 Hz, 5th and 9th harmonic of 60 Hz
	(100 / 120 Hz) rectified power
Auxiliary	512 Hz
	560 Hz
	640 Hz
User Defined Frequencies	Four

Marker Compatibility:	
3M™ EMS/ID Markers 3M™ EMS 7600 Series Caution Tape	All 3M markers (telephone, gas, communication, power, water, wastewater and general purpose) All 3M path marking caution tape (telephone, gas, water, waste water)
Write Range 3M™ ID Markers:	(Telephone,Power*, Gas, Water, Wastewater, Communications (CATV), General Purpose)
Near-Surface Ball Marker Full-Range	6 in (15 cm) 12 in (30 cm) 24 in (61 cm)

* The Power frequency is not supported for 7550E/7573E in write mode.

7550/7573 Read Range 3M™ ID Markers:	(Telephone, Power, Gas, Water, Wastewater, Communications (CATV), General Purpose)*
Near-Surface Ball Marker Full-Range	3 ft (0.9 m) 5 ft (1.5 m) 8 ft (2.4 m)
7550E/7573E Read Range 3M™ ID Markers:	(Telephone, Water, Gas, Wastewater, Communications (CATV), General Purpose)*
Near-Surface Ball Marker Full-Range	90 cm (36 in) 1.5 m (60 in) 2.4 m (96 in)

* Some countries do not allow all marker operating frequencies. Refer to Configuration Section for 7550E/7573E (Section 4A).

Detection Depth for Passive Markers (no ID):	
Near-Surface Ball Marker Mid-Range Full-Range	3 ft (0.9 m) 6 ft. (1.8 m) 7 ft. (2.1 m) 9 ft. (2.75 m)

Maximum* Burial Depth	
7600 Series CT-3 Tape Depth measurement accuracy	2.0 ft. (.61 m) +/- (10% + 5 cm) or +/- (10% + 2 in) up to specified depth of marker or caution tape (Depth accuracy susceptible to high ambient noise conditions) Maximum Burial depth 2.5 ft (.7 m)

ID Marker Memory Storage:	
Memory storage with date/time stamp Written marker records User defined ID templates Marker depth memory storage	Read marker records 100 100 32 Five with date/time stamp

Notes:

1. It's recommended to use the rechargeable battery pack. However, a battery holder is provided for using 8-AA size Alkaline batteries for backup, which would have reduced battery life.
2. The battery life is specified for the 12V2R4 rechargeable battery pack at 73°F / 23°C, with 10% usage of the backlight and audio volume at medium level.

7500 Series U Version 12-Watt Transmitter Specifications

Item	Specification
Trace Mode	577 Hz 1 kHz 8 kHz 33 kHz 82 kHz 200 kHz
Fault Mode (7573 models only)	10/20 Hz -Fault signal 577 Hz / 33 kHz -Trace signal.
Tone Mode (7573 models only)	577 Hz and 200 kHz pulsing at 8 Hz
Induction Mode	8 kHz 33 kHz 82 kHz 200 kHz
Output Power (in Direct Connect mode)	Normal setting: 0.5 W High setting: 3 W @ 577 Hz, 1 kHz, 8 kHz, 33 kHz; 1 W @ 82 kHz, 200 kHz Maximum setting: 12 W @ 577 Hz, 1 kHz, 8 kHz; 10 W @ 33 kHz; 1 W @ 82 kHz, 200 kHz
Output Voltage (Maximum)	70 Vrms

Item	Specification
Output Protection	240 Vrms
Weight with batteries	with alkaline batteries only: 5.2 lbs (2.4 kg) with rechargeable battery and alkaline batteries: 9.2 lbs (4.2 kg)
Battery Qty. and size	For Normal and High Output Power: 6 "C" size, Alkaline (LR14) For Maximum Output Power: Rechargeable Battery, 12V-6AH, Sealed Maintenance-Free Lead (Pb)-Acid Battery
Typical Battery Life	Normal Output Power level: 50 hours High Output Power level: 10 hours Typical transmitter specified battery life (listed above) is increased by 40% when using the 2200RB Rechargeable Battery (12 volt). Using the 2200RB bypasses the alkaline batteries. Maximum Output Power level: 4 hours (Maximum Output Power level achieved using 2200RB Rechargeable Battery.)
External DC Power	9–18 V DC
Standard	IP54
Regulatory	FCC compliant, FCC Part 15
Operating Temperature	4°F to 122°F (-20°C to 50°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Rechargeable Battery Fuse	5 Amp / 32 Volt Littelfuse MINI® Blade # 0297005
Cigarette Lighter Adapter Cable Fuse	4 Amp/Fast Blow 250V

7500 Series E Version 12-Watt Transmitter Specifications

Item	Specification
Trace Mode	577 Hz 1 kHz 8 kHz 33 kHz 82 kHz 133 kHz
Fault Mode - (7573 models only)	10/20 Hz -Fault signal 577 Hz / 33 kHz -Trace signal *Note: The fault locating limit is 2.0MΩ, although the transmitter's ohm-meter mode can display a fault resistance up to 10MΩ.*
Tone Mode - (7573 models only)	577 Hz and 200 kHz pulsing at 8 Hz
Induction Mode	8 kHz 33 kHz 82 kHz 133 kHz
Output Power (in Direct Connect mode)	Normal setting: 0.5 W High setting: 3 W @ 577 Hz, 1 kHz, 8 kHz, 33 kHz; 1 W @ 82 kHz, 133 kHz Maximum setting: 12 W @ 577 Hz, 1 kHz, 8 kHz; 10 W @ 33 kHz; 1 W @ 82 kHz, 133 kHz (with external DC power source)
Output Voltage (Maximum)	70 Vrms
Output Protection	240 Vrms
Weight w/batteries	with alkaline batteries only: 5.2 lbs (2.4 kg) with rechargeable battery (2200RB) and alkaline batteries: 9.2 lbs (4.2 kg)
Battery Qty. and size	For Normal and High Output Power: 6 "C" size, Alkaline (LR14) For Maximum Output Power: Rechargeable Battery (2200RB), 12V-6AH, Sealed Maintenance-Free Lead (Pb)-Acid Battery (See safety information below.)
Typical Battery Life	Normal Output Power level: 50 hours High Output Power level: 10 hours Typical transmitter specified battery life (listed above) is increased by 40% when using the 2200RB Rechargeable Battery (12 volt). Using the 2200RB bypasses the alkaline batteries. Maximum Output Power level: 4 hours (Maximum Output Power level achieved using 2200RB Rechargeable Battery.)
External DC Power	9–18 V DC
Standard	IP54
Regulatory	CE Compliant
Operating Temperature	4°F to 122°F (-20°C to 50°C)
Rechargeable Battery Fuse	5 Amp / 32 Volt, Littelfuse MINI® Blade # 0297005
Cigarette Lighter Adapter Cable Fuse	4 Amp/Fast Blow 250V

3M and Dynatel are trademarks of 3M Company.

Conditional Limited Warranty

3M provides the following Conditional Limited Warranty for its EMS Caution Tape 7600 Series Products: When installed in accordance with 3M's installation instructions, 3M warrants EMS Caution Tape for a period of one (1) year from the date of purchase of the product, to be free from defects in material and manufacture, provided EMS Caution Tape is located with 3M™ Dynatel™ Locators or other brand locators as may be designated by 3M in writing. This warranty does not extend to EMS Caution Tape that has been subjected to misuse or improper application or that have been repaired or altered by others. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. If the EMS Caution Tape is found to be defective within the warranty period, your exclusive remedy shall be, at 3M's options, to repair or replace the EMS Caution Tape or refund the purchase price. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.

Conditional Limited Warranty

3M provides the following Conditional Limited Warranty for its ID Electronic Marker Products: When installed in accordance with 3M's installation instructions, 3M warrants ID Electronic Markers for a period of ten (10) years from the date of purchase of the product, to be free from defects in material and manufacture, provided ID Electronic Markers are located with 3M™ Dynatel™ Locators or other brand locators as may be designated by 3M in writing. This warranty does not extend to ID Electronic Markers that have been subjected to misuse or improper application or that have been repaired or altered by others. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. If the ID Marker is found to be defective within the warranty period, your exclusive remedy shall be, at 3M's options, to repair or replace the ID Markers or refund the purchase price. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.

Conditional Lifetime Warranty

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Conditional Limited Warranty

Locating instruments (except accessories), manufacture dated test leads, and rechargeable batteries will conform to 3M's published specifications and will be free from defects in material and manufacture for a period of twelve (12) months from the date of purchase. Dry cell batteries included in any of 3M's products are warranted only to the extent the battery manufacturer determines such batteries are covered by its warranty. Accessories for locating instruments are warranted for ninety (90) days after purchase. 3M's obligations and liability under this warranty are limited to repairing, replacing or refund of the purchase price, at 3M's option, any of 3M's products which, after normal and proper usage, are determined by 3M to be defective. This warranty does not extend to any of 3M's products which have been subjected to misuse, neglect, accident or improper applications, nor shall it extend to products which have been repaired or substantially altered outside 3M's manufacturing or repair facility, nor to any associated instruments, equipment or apparatus. Before utilizing any of 3M's products, BUYER should determine the suitability of the product for BUYER'S intended use. 3M MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no case shall 3M be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability or any other legal theory. This limitation does not apply to claims for personal injury.

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