

## Occupational & Environmental Noise

# 3M™ Sound Examiner SE-400 Series Sound Level Meters

The Sound Examiner SE-400 series of integrating, data-logging sound level meters is engineered to accurately measure noise levels in highly variable environments, including those that require intrinsic safety. They compute the average sound pressure level (LEQ/LAVG) over the run time, helping you to more accurately assess occupational and environmental noise levels.

### Removable Preamp\*

- Preamp can be easily removed to enable interference-free, low-level monitoring, especially for remote use

\* Available on non-Intrinsically Safe models only.

### Aerodynamic Shape

- Minimizes disturbance to sound fields being measured, assuring accurate readings

### Conformance to Standards

- Meets IEC 61672-1 (2002) and ANSI S1.43- 1997 (R2007) standards and is CE certified

Intrinsic Safety approvals on SE-401-IS and SE-402-IS.

### Choice of Microphones

- User can specify microphone type (Class/Type I or Class/Type II) based on application
- Select Type II for general duty; Type I accuracy for legal metrology

### Onboard Data Logging

- Allows user to capture maximum, minimum and peak values for thorough analysis
- Can be used with 3M™ Detection Management Software DMS to manage compliance with hearing conservation programs



Measurements	
Parameters	SPL, L <sub>MAX</sub> , L <sub>MIN</sub> , L <sub>PK</sub> (peak), L <sub>EQ</sub> /L <sub>AVG</sub> , L <sub>E</sub> , Elapsed Time
Peak and Frequency Weighting	A, C, Z
Response Time	Fast and slow
Ranges	110 dBA total dynamic measurement range; overall range 30 – 140 dBA (single range)

Measurements	
Max Peak Level	143 dBA (sampled peak)
Exchange Rates	3, 4, 5 dBA
Status Indicators	Run, Stop, Battery Status, OL (overload), UR (under-range), Run-Time, Locked Status

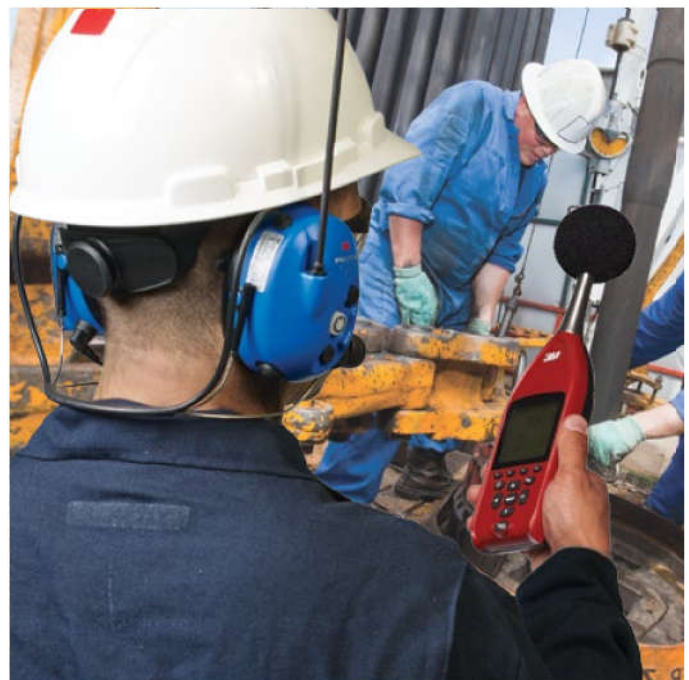
Physical	
Size	11.2" (L) x 2.8" (W) x 1.3" (D) / 28.4 cm (L) x 7.1 cm (W) x 3.3 cm (D) (with preamp and microphone)
Weight	SE-401 model: 12.9 oz / 367.5 g (with preamp and microphone) SE-402 model: 13.4 oz / 380.5 g (with preamp and microphone) SE-401-IS model: 14.5 oz / 410 g (with preamp and microphone) SE-402-IS model: 14.5 oz / 410 g (with preamp and microphone)
Housing	ABS polycarbonate IP65 (enclosure rated to IP65; microphone and external connectors not IP rated)
Tripod Mount	Standard photographic mount on backside accepts ¼" – 20 screw threads
Drop Protection	Minimum 2 meters onto concrete, 2 times on each face; acceptable microphone damage

Environmental	
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Humidity	0 to 90% RH, non-condensing
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Atmospheric Pressure	Operating: 80 to 110 kPa; Storage: 50 to 150 kPa

Power / Electrical	
Battery	Lithium polymer: 2500 mAHr for standard models / 1500 mAHr for IS models, rechargeable; Run-Time: 18 hours minimum (excluding the backlight) for standard models / 8 hours for IS models
Battery Life	3 years or 500 cycles (service replaceable)
Battery Charge	USB charger is provided with instrument; battery charge time: 8 hours (approx.)
Internal Memory	2MB (34 days at 1-minute logging)
Communications	USB interface
Standard Microphones	Class/Type 1 Precision QE4936 microphone; Class/Type 2 General QE7052 microphone
Preamplifier	Preamp directly accepts ½" (13.2 mm) microphone
Remote Cable	Drives up to 15 m (50 ft) of cable with negligible signal loss (not available on IS)

Ports and Connections	
AC/DC Output	3.5 mm stereo (tip – AC, center ring – DC, ring – Gnd); not applicable to IS models
I/O Connector	RS-232 (I/O connector not applicable to IS models)
USB	Conforms to USB 2.0, mini-USB connector

Conformance to Standards	
IEC 61672-1 (2002)	Electroacoustics, Sound Level Meters, Part 1: Specifications
ANSI S1.43-1997 (R2007) ANSI S1.4-1983 (R2006)	American National Standards: Specifications for Integrating Averaging Sound Level Meters Specifications for Sound Level Meters
CE Mark	Self-Certified
Intrinsic Safety Standards (SE-401 IS and SE-402 IS models)	UL 913, Ed.7, 2011-09-23; CSA C22.2; No. 157-92, (R2013); EN 60079-0 (2009); EN 60079-11 (2012); EN 60079-26; (2007); IEC 60079-0 Ed.5 (2007); IEC 60079-11 Ed. 6: (2012); IEC 60079-26; Ed. 2: (2009), CE mark 0539
Certificate Number	IECEX UL 13.0006X, Class I, Division 1, Groups C and D; Exi is defined as Intrinsically Safe (for use in potentially explosive atmospheres)
Hazardous Locations Class	Ⓔ II 1 G Ex ia IIB T4 (DEMKO 13 ATEX 1210031X); Ambient temperature range: -20°C to +50°C



Product Number	Description	3M ID
SE-402	Sound Examiner SE-402	70-0716-0794-2
SE-402-AC3	Sound Examiner SE-402-AC3	70-0716-2434-3
SE-402-IS	Sound Examiner SE-402-IS	70-0716-0796-7
SE-402-IS-AC3	Sound Examiner SE-402-IS-AC3	70-0716-2303-0
SE-402-R	Sound Examiner SE-402-R	70-0716-2216-4
SE-402-R-AC3	Sound Examiner SE-402-R-AC3	70-0716-2435-0
SE-401	Sound Examiner SE-401	70-0716-0795-9
SE-401-AC3	Sound Examiner SE-401-AC3	70-0716-2113-3
SE-401-IS	Sound Examiner SE-401-IS	70-0716-0793-4
SE-401-IS-AC3	Sound Examiner SE-401-IS-AC3	70-0716-2304-8

