# Quick Guide

## GRAS 40PM-1

EQset™ Miniature Production Line Microphone


## 1. EQset™

EQset is a technology that removes the unnecessary production line stoppages for calibration and provides consistent, valid data, drastically reducing the chances of false failures or false passes. And calibration is only needed to verify functionality and to validate the entire measurement chain because EQset microphone essentially equalizes the signal before it reaches the analyzer.

### 1.1 No need for TEDS

EQset ensures a flat response curve and uniform sensitivity for each microphone. The consistency between microphones enables data traceability without the need to track where each microphone is placed, so there is no need to identify individual microphones and make corrections based on their individual sensitivities and response curves.

## 2. 40PM-1

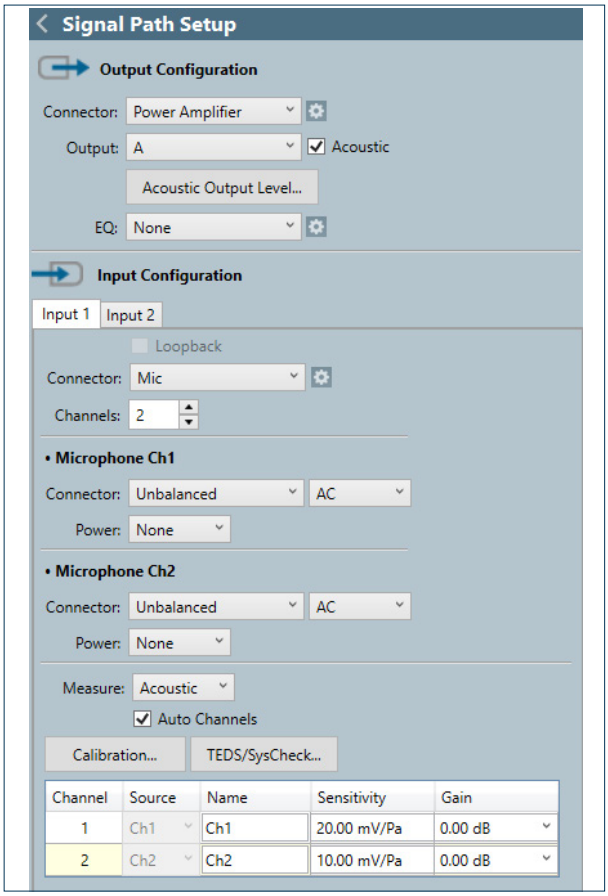
40PM-1 microphones with EQset are designed for use in production line environments. Designed to be cost-effective, easy to use, resistant to error, and environmentally stable, .

The tolerance for individual microphone sensitivities is less than ±0.2 dB, and frequency-response variation is less than ±0.5 dB up to 20 kHz. And because 40PM-1 is dimensionally identical to the traditional production line microphones, you can easily replace them in existing setups.

## 3. Setup and use with APx517B analyzer

Setting up and measuring with 40PM-1 microphones is very simple:

1. Place the microphone at the test station as required by the measurement standards.
2. Connect the cable to the microphone,
3. Set the sensitivity in the APx500 software (see figure):
   A. Go to **Signal Path Setup** panel > **Input Configuration** > **Input 1** tab.
   B. Set the **Measure** control to **Acoustic**.
   C. Set the **Sensitivity** to 20.00 mV/Pa for the channel used with the microphone (in this case, Channel 1).

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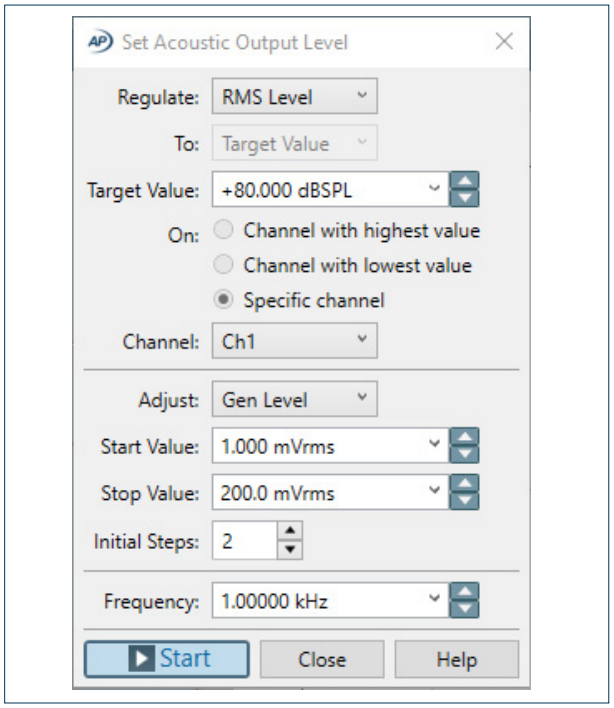
4. Set the **Acoustic Output Level** of the power amplifier:

**NOTE:** Before setting the acoustic output level, the microphone must be connected and setup as in Step 3.

A. Check the **Acoustic** checkbox in **Signal Path Setup** panel > **Output Configuration** (see Signal Path Setup figure, above).
B. **Click the Acoustic Output Level** button to open the **Set Acoustic Output Level** dialog (figure below). See the APx500 documentation for information on regulating the generator level for acoustic measurements.




5. Measure according to your standard processes.

## 4. Key specifications

| | |
|---|---|
| Sensitivity (±0.2 dB; @ 250 Hz) | 20 mV/Pa |
| Dynamic range | 30 dB(A) - 125 dB |
| Frequency range | 20 Hz to 20 kHz |
| Pressure response 20 Hz to 20 kHz | ±0.5 dB |
| Environmental stability variance (*) | ±0.2 dB |

**Typical environmental conditions on a production line are defined by temperature varying between 13 and 35°C (55 to 95°F), static pressure varying between 983 and 1043 hPa, and non-condensing humidity.*

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