The CH30I sensor is a medium frequency, resonant, acoustic emission sensor with an integral, low noise, filtered, 40 dB preamplifier that can drive up to 500 feet of cable. The sensor comes standard with PAC’s unique “Auto Sensor Test” (AST*) function.

The CH30I features a strong, insulated, lightweight, aluminum alloy, integrated body structure that is color-coded purple to identify the sensor model. This sensor’s outside shell is anodized, providing a nonconductive finish to prevent any possible electric shorts from metal testing structures. It is the same size and has the same frequency response and sensitivity as the R30I sensor, but the EMI shielding ability of the CH30I has been improved by more than 300% compared with previous versions.

Applications

- Normally chosen for use in noisy environments
- Pipeline tests with flow noise
- Steel structure highway bridges with low frequency road and wind noises

Operating Specifications

**Dynamic**

- Peak Sensitivity, Ref V/(m/s); Ref [V/µbar] ............. 97 [-22] dB
- Operating Frequency Range ..................................... 125 - 450 kHz
- Resonant Frequency Ref V/(m/s); Ref [V/µbar] .... 300 [350] kHz
- Directionality .......................................................... ±1.5 dB

**Electrical**

- Gain ........................................................................ 40 dB
- Power Requirements .............................................. 16 -30 Vdc @ 25 mA
- Dynamic Range ....................................................... >80 dB
- Output Voltage ....................................................... 20 V peak to peak
- Noise Level (RMS rti) .............................................. <2.4 µV
- Output Drive Impedance ........................................... 50 Ω
- Sensor Drive Capability ........................................... up to 500 ft (166 m)
- AST Pulse ............................................................. 24 V, 3 microseconds into crystal
- Grounding .............................................................. Case grounded, isolated from sensing face

**Environmental**

- Temperature Range ............................................... -35 to 75º C
- Shock Limit ............................................................. 500 g
- Completely enclosed crystal for RFI/EMI immunity

**Physical**

- Dimensions ......................................................... 1.13” dia x 1.28” h (29 x 32.6 mm)
- Weight ................................................................. 45 grams
- Case Material ................. Purple color, anodized aluminum alloy
- Face Material ................. Ceramic
- Connector ............................................................... BNC
- Connector Locations ............................................... Side
- Seal ............................................................... Epoxy
- Matching Cable .................................................... 1234-X

Ordering Information and Accessories

- Cable (specify cable length) ...................................... 1234-X
- Magnetic Hold-Down ........................................... MHR30I
- Amplifier .............................................................. AE2A

Sensors include

- NIST Calibration Certificate, Auto Sensor Test Function & Warranty

*AST – Auto Sensor Testing feature allows AE systems to control the sensor as a pulser and a receiver at the same time. It can therefore characterize its own condition as well as send out a simulated acoustic emission wave that other sensors can detect, so the condition of the nearby sensors also can be tested.*

Due to continuing improvement, Physical Acoustics Corp. (PAC) reserves the right to amend specifications without notice.

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