

# Data sheet

## Function Generators Models 4010A & 4011A



### 4010A 2 MHz Function Generator

- 0.2 Hz to 2 MHz
- Sine, Square, Triangle, Pulse & Ramp output
- Variable duty cycle
- Variable DC offset
- Variable amplitude output plus 20dB attenuator
- 20Vpp output into open circuit (10Vpp into 50 Ωs)
- cUL certified



### 4011A 5 MHz Function Generator

- 0.5 Hz to 5 MHz
- Sine, Square, Triangle, Pulse, & Ramp output
- Coarse and Fine tuning
- 4 digit LED display
- Variable duty cycle
- Variable DC offset
- Variable amplitude output plus 20dB attenuator
- 20Vpp output into open circuit (10Vpp into 50 Ωs)
- cUL certified



| Specifications                   | 4010A                                                                   | 4011A                                      |
|----------------------------------|-------------------------------------------------------------------------|--------------------------------------------|
| <b>Frequency Characteristics</b> |                                                                         |                                            |
| Waveforms                        | Sine, Square, Triangle, ±Pulse, ±Ramp                                   |                                            |
| Range                            | 0.2 Hz to 2 MHz<br>in 7 ranges                                          | 0.5 Hz to 5 MHz<br>in 7 ranges             |
| Resolution                       | NA                                                                      | 4 digits                                   |
| Dial Accuracy                    | ±5% typical                                                             | NA                                         |
| Tuning Range                     | 10:1<br>Does not apply                                                  | Coarse, 10:1<br>Fine ±5% of coarse setting |
| Variable Duty Cycle              | 15:85:15 cont variable                                                  | 15:85:15 Cont variable                     |
| Operating Modes                  | Normal, VCG                                                             |                                            |
| <b>Output Characteristics</b>    |                                                                         |                                            |
| Impedance                        | 50Ω ±10%                                                                |                                            |
| Level                            | 20 V p-p Open circuit, 10V p-p into 50Ω                                 |                                            |
| Amplitude                        | Variable, 20 dB range typical                                           |                                            |
| Attenuation                      | -20 dB ±1dB                                                             |                                            |
| DC Offset                        | Preset ±0.1 V typ<br>Variable: ±10V open-circuit ±5 into 50Ω            |                                            |
| Distortion                       | ≤ 4% @ 1 kHz                                                            | ≤ 3% @ 1 kHz                               |
| Flatness                         | ≤ 5% (.45 dB)                                                           |                                            |
| Symmetry                         | 0.5 Hz to 100 KHz ≤ 2%                                                  |                                            |
| Risetime (Into 50Ω)              | ≤ 120 nS                                                                | ≤ 20 nS                                    |
| Linearity                        | ≥ 98% to 100 KHz, ≥ 95% to 2 MHz                                        |                                            |
| <b>TTL Output</b>                |                                                                         |                                            |
| Level                            | 0.8V to 2.4V                                                            |                                            |
| Rise time (0.8V to 2.9V)         | ≤ 50 nS                                                                 | ≤ 20 nS                                    |
| Duty Cycle                       | 50% typical                                                             |                                            |
| <b>CMOS Output</b>               |                                                                         |                                            |
| Max. Frequency                   | 2 MHz                                                                   |                                            |
| Level                            | 4V to 14V ±0.5 p-p cont. variable                                       |                                            |
| Rise Time                        | ≤ 120 nS                                                                |                                            |
| <b>Input VCG</b>                 |                                                                         |                                            |
| Input Voltage                    | 0-10V ±1V causes a 100:1 frequency change                               |                                            |
| Impedance                        | 10KΩ ±5%                                                                |                                            |
| <b>Frequency Counter INT</b>     |                                                                         |                                            |
| Accuracy                         | NA                                                                      | Time Base Acy ±1 count                     |
| Time Base Accuracy               | NA                                                                      | ±10 PPM (23°C ±5°C)                        |
| <b>General</b>                   |                                                                         |                                            |
| Display                          | NA                                                                      | 4 digit LED                                |
| Power Source                     | 120/230 VAC ± 10%, 50/60 Hz,<br>internal jumper selectable              |                                            |
| Dimensions (H x W x D)           | 4.5 x 11.75 x 10.375", (114 x 298 x 264 mm)                             |                                            |
| Weight                           | 4 lbs. (1.8 kg)                                                         |                                            |
| <b>Two Year Warranty</b>         |                                                                         |                                            |
| Supplies Accessories             | Output cable with BNC to alligator clips, Instruction Manual, Line Cord |                                            |
| Optionmal Accessories            | Carrying Case (not included): LC-40, TLFG kit                           |                                            |