

## myParts Kit from Texas Instruments: Companion Parts Kit for NI myDAQ



SKU: 6002-240-001

Get your students quickly involved in building essential electronic circuits using myParts Kit supported by the Texas Instruments® University Program.

The set of key components in the myParts Kit encourages hands-on experimentation with breadboards of basic circuitry, helping to make learning productive and enjoyable for beginners and more advanced students alike. Hobbyists and independent developers will also find the kit useful for investigating their design concepts.

The kit comes with a collection of parts that are the building blocks of all electronics, including op-amps, an instrumentation amplifier, a comparator, voltage regulators, switching regulators, digital logic gates, timers, temperature sensors, data converters, transistors, resistors, capacitors, LEDs, switches, a wiring kit and more. myParts Kit enables your students to run experiments that help them understand real-life applications in areas such as power management, audio amplification, spinning motors, light detection, signal conditioning, data acquisition, and telecommunications to name a few. Projects that can be built with the kit include:

- Inverting and non-inverting amplifiers
- Filters
- Voltage followers
- Regulators
- Signal conditioning
- Pulse-width modulated (PWM) signal generators
- Integrators

- Differentiators
  - Light detectors
  - Data converters
- ...and many others.

### Note:

Fits well with other tools:

The kit is a great complement to the NI myDAQ and ELVIS tools, as well as the Digilent Electronics Explorer Board, for hands-on learning both inside and outside of the lab. Students can use the simulation software that is already available in school to simulate results before building their circuits. In addition, if your school uses NI Multisim, you have the capability of pulling many of these TI devices into a design. myParts Kit can help get your students ready to launch specialized advanced projects in renewable energy, bio-medical and robotics and automation, to name only a few applications. For these systems, students can turn to the wide portfolio of semiconductor products that TI offers, including microcontrollers, processors, wireless connectivity solutions, power management, data conversion, amplifiers, and logic. Many of the analog devices are supported by educational kits available through TI's University Program, such as the Analog System Lab Kit PRO, which helps you learn the essential analog building blocks of an electronics system.

### Features:

Op-amps:

- Op-amp: TL072CP
- Op-amp: TL074CN
- Op-amp: LF356
- Op-amp: LM741C
- Instrumentation Amp: INA217
- Comparator: LM311P

Regulators:

- 1.5A boost/buck/inverting switching regulator: MC34063AP
- Voltage regulator: LM317 (TO-220)

Logic ICs:

- NAND: triple 3 input (SN74LS10N)
- NAND: quad 2 input (SN74LS00N)
- OR: quad 2 input (SN74LS32N)
- XOR: quad 2 input (SN74LS86N)
- NOR: quad 2 input (SN74LS02N)
- AND: quad 2 input (SN74LS08N)
- Inverter buffer/driver: SN74LS04N Hex
- Counter, 4-bit: SN74LS163N
- Dual JK flip-flop: SN74LS107AN
- D type dual flip-flop: SN74LS74N
- Decoder/encoder/mux: CD4511BE
- 3 to 8 decoder/demux: SN74LS138N
- 8 to 3 encoder: SN74LS148
- Dual complementary pair/inverter: CD4007UB
- Timer: TLC555CP

#### Converters:

- Freq to V converter: LM2917N/NOPB
- A/D converter, 12-bit: ADS7816P
- A/D converter: ADS7822P
- D/A converter, 12-bit: TLV5616CP

#### Diodes:

- Zener diode: 1N4735
- Small signal diode: 1N3064
- Fast switching diode: 1N914B
- 1A Schottky diode: 1N5819
- 1A rectifier diode: 1N4001
- Infrared receiver diode
- Infrared emitter diode

#### Resistors:

- $\frac{1}{4}$  W, 1.1  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 2.2  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 10  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 47  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 68  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 100  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 150  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 200  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 220  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 330  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 470  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 680  $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 1 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 1.5 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 2.2 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 3.3 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 4.7 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 5.6 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 10 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 15 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 20 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 22 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 33 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 47 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 68 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 100 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 200 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 470 k $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 1 M $\Omega$ ,  $\pm 5\%$
- $\frac{1}{4}$  W, 10 M $\Omega$ ,  $\pm 5\%$

#### Power Resistors:

- 10W, 6.8  $\Omega$ ,  $\pm 5\%$

#### Potentiometers:

- $\frac{3}{4}$  W, 1 k $\Omega$ ,  $\pm 10\%$ : 3006P-102
- $\frac{3}{4}$  W, 10 k $\Omega$ ,  $\pm 10\%$ : 3006P-103

- $\frac{3}{4}$  W, 100 k $\Omega$ ,  $\pm 10\%$ : 3006P-104

Ceramic Capacitors:

- 39 pF (x2)
- 100 pF (x2)
- 1 nF (x2)
- 2.2 nF (x2)
- 4.7 nF (x2)
- 10 nF (x4)
- 47 nF (x2)
- 100 nF (x2)

Electrolytic Capacitors:

- 1  $\mu$ F, 50V (x2)
- 4.7 $\mu$ F, 50V (x2)
- 10  $\mu$ F, 50V (x2)
- 22  $\mu$ F, 25V (x2)
- 47  $\mu$ F, 25V (x2)
- 220  $\mu$ F, 25V,  $\pm 20\%$  (x1)
- 470  $\mu$ F, 25V,  $\pm 20\%$  (x2)

Transistors:

- P-channel MOSFET (x4): ZVP2110A
- NPN transistor (x3): 2N3904L
- PNP transistor (x3): 2N3906L
- NPN bipolar power transistor: TIP31C
- PNP bipolar power transistor: TIP32C
- N-channel power MOSFET: IRF510
- Compl. transistor pair: STD815CP40 or STD830CP40
- Dual NPN high voltage transistors: STD845DN40 or STD840DN40

LEDs:

- Red (x2)
- Yellow (x2)
- Green (x2)

Misc:

- Audio transformer
- Photocell buzzer
- Light sensor
- Wiring kit