Galep-4 Universal Programmer
[Parallel Port]

PALMSIZED, 40 PIN PROGRAMMER

- 11,000 DEVICE SUPPORT
- Dual power (AC adapter plus internal battery w/8 hours continuous
- operation on a single charge)
- Ultra-compact 4.5" x 3" palmsize package (fits in a shirt pocket!)
- Programs: 8-16 bit EEPROM, Normal & serial EEPROM,
- FLASH EPROM, GAL, PALCE, MCU (e.g. Atmel AVR, PIC-Micro)
- Auto split/shuffle for 8-16-32 bit systems
- Supports HEX, JEDEC, binary file formats
- Integrated HEX & Fuse-map Editor
- Low Voltage components down to 1.3 Volts.
- Socket Converters for most Component Packages
- 20,000 device support within 4 years via free software upgrades
- Very fast parallel data transf. (e.g. 27C256 Read/Verify = 2 Sec. –
- Program = 8 Sec.)
- Load & Save complete projects (incl. device select, data & device settings)
- Software loadable with pre-configured settings
- Comprehensive device search and select function
- Comprehensive serial number management tools
- Configure 'Auto Run' button feature
- Warranty - 2 years by manufacturer, for any hardware defect
- Highly precise ASIC pin-driver implemented to all 40 pins

GALEP-4, remains the smallest true universal 40 pin programmer on the market today, and still the only one with an internal power supply. Many programmers on the market in this price bracket only implement a few universal pin drivers. Conitec's ultra-compact palmsize model Galep-4 still holds it's own – as it carries a separate universal pin driver for each of the 40 socket pins. The GALEP-4's uncompromising socket design actually corresponds to that normally found in far more expensive programmers.

Low-Voltage GALEP-4 pin drivers feature true level-shifters and comparators, guaranteeing clean signals right down to 1.3 volts. Galep-4 comparators allow measurement of the voltage on any of the 40 pins within a range of 0 to 25 volts with a precision of 100 mV. This can be used to precisely determine high and low levels at the component's output pins. The Galep-4 consequently requires far fewer socket adapters than comparably priced programmers.

Ultra-Compact: The portable Galep-4 model is tiny – it fits easily into a shirt pocket and weighs barely 7 OUNCES. Yet this diminutive programmer runs on battery as well as mains power for demanding assignments in the field, all while handling over 10,000 devices!

40 Universal pin drivers: A custom-designed pin-driver circuit was specially developed for each pin of all 40 pins on the socket. GALEP-4's achieve high signal quality specifications for each component programmed – with the hardware characteristics of higher end programming tools – yet at a price 1-4 to 1-3 lower than such higher end competitors.

General Specs Include: Blank Check, Read, Program, Verify, Checksum, Encryption, Erase, Load / Save device settings, Comprehensive dev. search /select function; Comprehensive Serial Number Management tools: Configure "Auto-Run" Button Feature (e.g. Blank check, erase, generate serial & program, with a click of the 'auto' button). Unit requires parallel port interface.

In System Prog. (ISP): Signals for in-system programming can be drawn from a (separately available) ISP adapter or direct from ZIF socket. .

Software: Windows 95, 98, ME, NT4, 2000, XP. Comprehensive basic functions such as read, program, compare, delete, with easy-to-use custom options for special functions. The editor allows many functions, can save / load in binary, intel-hex, motorola-s or jedec format. Mass production capable via statistics functions / serial number generation. **Security**: Prior to operations, GALEP-4 checks power consumption, correct positioning and contacts for all pins of selected component, preventing accidental damage of component or device.

Universal Pin driver Advantage: GALEP-4 programs all components currently supported (11,000) in DIL socket up to 40 Pins between 300 - 600 MIL (i.e. ca. 7,5 up to 16 mm) wide, without other adapters. Poor quality pin drivers have long been a problem in cheaper programmers. Needham's for example, states (of their EMP-300 model) :

"The EMP-300 (and the EMP-100) use Family Modules to route power to devices. This not only is a BIG cost saver, and lets us use a minimum number of very clean, precise pin drivers instead of designing cheap pin drivers for each pin. This translates to cleaner, more manageable waveforms, at a much lower price."

By developing our own ASIC pin driver, even Conitec's older model GALEP-4 (at one quarter of the price!) offers the same "very clean, precise pin drivers". In contrast to the EMP-11 or even EMP-300 however, we don't employ just a few, which tediously require routing using "Family Modules". I*nstead there's a separate pin driver for each of the 40 pins on Galep-4.*

Low-Voltage GALEP-4 pin drivers feature true level-shifters and comparators. This guarantees clean signals for low voltage components down to 1.3 volts. Lower quality hardware uses resistors instead. Using resistors, low voltage components can theoretically be programmed, but signals will not be sufficiently clean to fulfill component specifications. Because comparators are missing, this method is also limited to a minimum voltage of 3.3 volts.

Further, Conitec comparators allow measurement of voltage on any of 40 pins within a range of 0 to 25 volts with precision of 100 mV. This can precisely determine high and low levels at the component's output pins. Programmers which employ lower cost specialized pin drivers or universal pin-drivers only partially to the socket – require multiple adapters within each component package type, leading to large, total system cost differences.

Socket Design – Implementing an all-universal-pin socket combines high sensitivity for demanding programming tasks with unmatched price / performance totaling complete programmer system cost. This combines low system cost (less adapters), with a high specification programming system. **The cheap pin-driver penalty –** Programmers which use low cost specialized pin-drivers or universal pin-drivers only partially to the socket – invariably require greater numbers of adapters for each component package type, with larger cost differences when includeing large and inefficient adapter requirements.

Device packages supported: Supports programmable devices of the following types: PROM, EPROM, EEPROM, FLASH memory, serial EEPROM, NV-RAM, LPC, FWH, FPGA, PLD, EPLD, GAL, PALCE, PIC, Micro-controllers (MCU) ranging up to 240 pins.

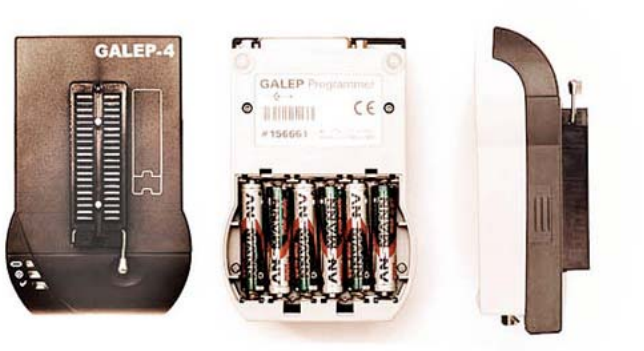
In System Programming (ISP): The signals for In-System Programming (ISP) can be drawn from a separately available ISP adapter or directly from the 40-pin ZIF socket. The help system provides information about the wiring of the target system for all supported components.

Software: The GALEP-4 software runs under Windows 95, 98, ME, NT4, 2000, XP, and Vista 32 Bit. Besides basic functions such as read, program, compare and delete, it features easy-to-use custom configuration options for any special functions required by the selected device. The editor supports binary, Intel-Hex, Motorola-S or JEDEC file format. Mass production is supported via statistics functions and serial number generation. Conitec provides frequent software updates adding hundreds of new devices monthly – a lifetime free service to clients. If you require a device not yet supported, use our free Device on Demand Service or ask on the Forum.

Real Device Support: (No inflated device lists!) – Example: some higher end ELNEC programmers list "32,000 device support. The GALEP-5 handles most of the same devices, yet CONITEC lists only 11,000 devices**.** As an example, for the GAL16V8, (a LATTICE part) CONITEC lists just 21 entries for this part**,** but that includes ALL sub-types**.** ELNEC lists more than 400 ENTRIES. Both programmers are in fact handling the same real parts, but with different accounting methods.

What We Do – We build hardware tools of uncompromising quality – We pass that quality directly on to clients in price / performance. GALEP programmers are designed for unlimited expansion of device support (via free software upgrades), while relying on notably fewer socket adapters than many leading brand-name competitor tools. The programmer kit ships complete with AC power cord, parallel printer port cable, software CD and HTML format user manual. A PCMCIA adapter card is available, which provides a reliable solution for PC’s without a parallel port.

PAGE FOUR



Technical Specifications

- Format: ca. 80 X 115 X 33mm (3 ins X 4.5 ins. X 1 inch – fits in a shirt pocket)
- Weight: ca. 185 grams. (Weighs just 6.5 ounces!)
- 40-pin ZIF socket with 40 true universal pin drivers
- Programs low-voltage components down to 1.2V
- Devices supported : Normal & Serial EPROM, EEPROM, FLASH, GAL, PALCE, MCU (e.g. Atmel AVR, PIC-Micro) Microcontrollers
- Low Voltages to 1.3V.
- Prog. Algorithms: Normal, Intelligent, Quick Pulse, Flash Prog.
- AC adapter plus battery compartment for high-power load devices
- 11,000 + Devices supported by package; (5,200 by discrete name) ** ** 200+ new devices added monthly
- Buffer Features: View / Edit, Clear, Fill, Move, Copy, Checksum, File Load, File Save
- Manages 8-, 16-, 32-, Data Split Auto-increment

Conitec Part Identification Number

Conitec Part # **190633**

Each Kit contains

- GALEP-4 device programmer
- Parallel Port cable
- AC adaptor (rechargeable batteries not included)
- CD with manual and software

System Requirements

- Windows 32 Bit OS, 98SE / ME / NT4 / 2000 / XP /
- Parallel Port connected PC.

Warranty: 24 Months. Certification: CE, RoHS, UL, ISO 9001 / 2000 Certified.

Price: $