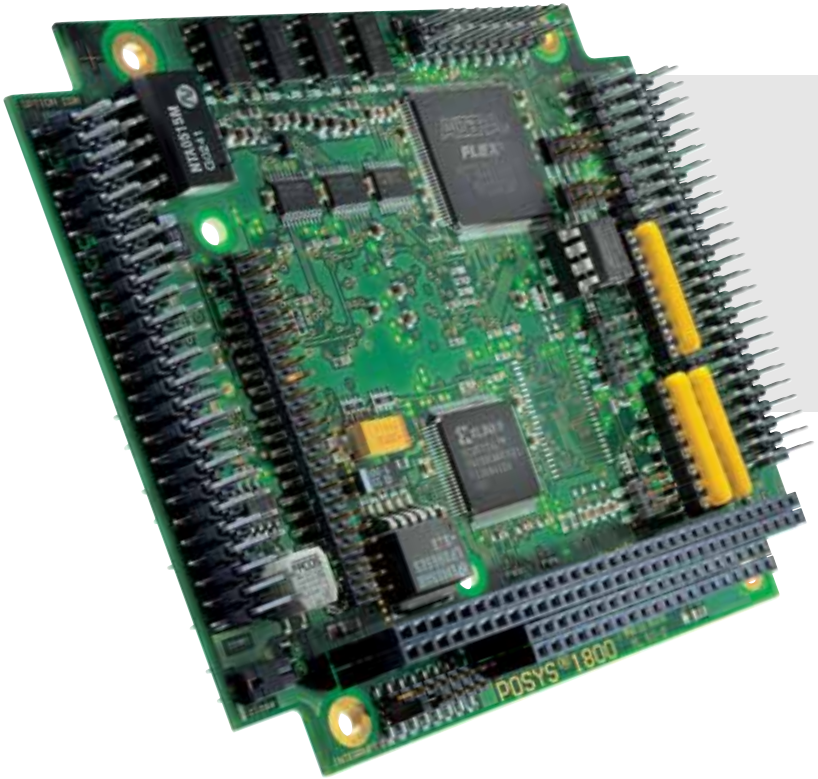
servo Halbeck

POSYS® 1800

POSYS® 1800

PC/104-Bus Motion Controller for up to 4 Axes for Servo and Stepper Motors
Multiple Motor Mode Operation (each axis individually configurable)



- ✓ *Servo loop timing range: 1 axis = 51.2 µsec., 2 axes = 153.6 µsec., 3 axes = 204.8 µsec., 4 axes = 256 µsec. minimum cycle time*
- ✓ *Multiple Motor Mode Operation, each axis individually configurable or low-cost Stepper versions available.*
- ✓ *Synchronization Input/Output for more than 1 card per system.*
- ✓ *Bi-Quad output filters; Low-, high-, band-, notch and custom-filter.*
- ✓ *Watchdog Timer.*
- ✓ *Communication via PC/104-Bus, RS232 or CAN 2.0B.*
- ✓ *Velocity, acceleration, PID and position changes "on-the-fly" for trapezoidal and velocity-contouring profiles.*
- ✓ *Incremental encoder quadrature input with upto 5 MHz and optional SSI input for absolute encoder*
- ✓ *Equipped with 16k x 16 or 32k x 16 Dual Port RAM to store complex motion sequences and trace variables*
- ✓ *Trace capabilities for system performance checks, servo-tuning, maintenance and diagnostics in real-time. Uses on-board memory.*
- ✓ *Advanced breakpoint capability allows precise sequencing of events.*
- ✓ *8 inputs, 8 outputs, 4 amplifier enable outputs and 8 general-purpose analog inputs, 1 AxisIn & 1 AxisOut per axis*
- ✓ *Two directional limit switches, index input, and home/high speed latch input per axis.*
- ✓ *Axis settled indicator and tracking window in addition to automatic motion error detection*

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Specifications

- *Available configurations:*
  4 axes (POSYS® 1804, 1824, 1854), 3 axes (POSYS® 1803, 1823, 1853), 2 axes (POSYS® 1802, 1822, 1852), 1 axis (POSYS® 1801, 1821, 1851), half size PCI-Bus card pnp
- *Operating modes:*
  Closed loop (motor command is driven from output of servo filter)
  Open loop (motor command is driven from user-programmed register)
- *Communication modes:*
  16/16 parallel, RS232, CAN 2.0B
- *Position range:*
  -2,147,483,648 to +2,147,483,647 counts
- *Velocity range:*
  -32,768 to +32,767 counts/sample with a resolution of 1/65,536 counts/sample
- *Acceleration and deceleration ranges:*
  -32,768 to +32,767 counts/sample² with a resolution of 1/65,536 counts/sample²
- *Jerk range:*
  0 to ½ counts/sample³, with a resolution of 1/4,294,967,296 counts/sample³
- *Profile modes:*
  S-curve point-to-point
  Trapezoidal point-to-point
  Trapezoidal point-to-point (w/ smoothing factor, option)
  Velocity-contouring
  Electronic Gear
- *On the fly control:*
  of profile and filter parameters with pre-load and individual axis or simultaneous multi-axes update
- *Electronic gear ratio range:*
  -32,768 to +32,767 with a resolution of 1/65,536 (negative and positive direction)
- *Filter modes (not for axes configured for stepper motors):*
  Scalable PID + Velocity feedforward + Acceleration feedforward + Bias. Also integration limit, settable derivative sampling time, and output motor command limiting
- *Filter parameter resolution (not for axes configured for stepper motors):*
  16 bits
- *Position error tracking:*
  Motion error window (allows axis to be stopped upon exceeding programmable window)
  Tracking window (allows flag to be set if axis exceeds a programmable position window)
- *Motor output modes:*
  DAC: 16 bits ±10V output
  PWM: 10-bit resolution at 20 KHz or 8-bit resolution at 80 KHz
  50/50 supports 2 or 3 phase motors
  Sign/magnitude supports 2 phase motors only
  Pulse and Direction Output: 5 MHz, TTL & Differential
- *Hall sensor inputs (brushless version only):*
  3 Hall effect inputs per axis (TTL level signals)
- *Commutation rate (brushless version only):*
  20 KHz
- *Maximum encoder rate:*
  Incremental (up to 5 Mcounts/sec) optionally 10 Mcounts/sec
  Parallel-word (up to 160 Mcounts/sec)
  contact us for connection to other feedback devices
- *Parallel encoder word size:*
  16 bits
- *Parallel encoder read rate:*
  20 KHz (reads all axes every 50 µsec)
- *Servo loop timing range:*
  1 axis = 51,2 µsec, 2 axes = 153,6 µsec, 3 axes = 204,8 µsec, 4 axes = 256 µsec minimum cycle time.
- *Limit switches:*
  2 per axis: one for each direction of travel, digitally filtered
- *Position-capture triggers:*
  2 per axis: index and home signals (high speed position latch)
- *Other digital signals (per axis):*
  1 AxisIn signal per axis, 1 AxisOut signal per axis
- *Software-invertable signals:*
  Encoder A, Encoder B, Index, Home, AxisIn, AxisOut, PositiveLimit, NegativeLimit, MotorOutput (±10V) and StepOutput (all individually programmable per axis)
- *Analog input:*
  8 x 10-bit analog inputs (0 - 2,048 V)
- *RAM memory support:*
  512 KBytes single port RAM or optional 16K x 16 (standard for POSYS® 182x) dual port RAM
- *Trace modes:*
  one-time
  continuous
- *Number of trace variables: 28*
- *max. Number of traceable variables to compare at the same time: 4*
- *Number of host instructions: 180*
- *Emergency stop:*
  5V TTL input (either for smooth stop, abrupt stop or motor off) uses the AxisIn signal
- *I/Os:*
  8 digital inputs / TTL, active low
  4 axis specific inputs
  8 digital outputs / TTL, active low
  4 digital outputs for amplifier enable
  4 axis specific outputs
  8 analog inputs (0 - 2.048 Volts)
  Synchronization IO for multiple cards per system (exception: axes in stepper mode)
- *Special profile mode combinations:*
  Trapezoidal mode with Electronic gearing
  S-curve mode with Electronic gearing
- *Master/Slave change:*
  Automatic Master/Slave change possible if programmed in user-defined software
- *Motor check:*
  programmable max. motion error with or without automatic motor shutdown
- *Connectors:*
  x2 50-position IDC connector (wiring compatible to POSYS® 800 and 800-B series)
  x1 50-position IDC connector (only needed together with axes in brushless or microstepping mode (wiring compatible to POSYS® 800-B series)
  x1 20-position IDC connector for inverted Pulse & Direction output signals
  Interconnect module IO700/800
- *Watchdog Timer*
- *Dimensions:*
  PC/104-Bus card; (96x110 mm)
- *Operating temperature:*
  standard: 0° to 70°C
  extended: -40° to +85°C
- *Power:*
  1A, 5V

OPTIONS:

Cable800 *- Matching flat cable, 50 positions to 50 positions, 1m long 1, 2 or 3 needed depending on model and # of axes*

IO700/800 Interface *- interface and interconnect board (1 for each set of 4 axes); Mounting: Phoenix EN snap-on rail*

IO50 *- for connectiong to additional 50-position connector, Mounting: Phoenix EN snap-on-rail*

SSI800/900 *- for encoders with SSI-interface*

TunePOSYS & MotionScript® Software *- for servo-tuning, maintenance, diagnostics and system performance check with/without graphical output*

Ordering Information:

# of Axes	*Brushtype Servo and Stepper Mode*	*Multiple Motor Mode*	*Stepper Mode*
1	*POSYS® 1801*	*POSYS® 1821*	*POSYS® 1851*
2	*POSYS® 1802*	*POSYS® 1822*	*POSYS® 1852*
3	*POSYS® 1803*	*POSYS® 1823*	*POSYS® 1853*
4	*POSYS® 1804*	*POSYS® 1824*	*POSYS® 1854*

The POSYS 1800 is equipped with 16K x 16 or 32K x 16 DPRAM as a standard. To order with other than the standard RAM configurations please contact us for details.

servo-Halbeck provides services to companies with unique motion control requirements and significant production quantities to customize their motion contollers. Motion controller customization, including individual development of special interfaces to standard bus systems and modifications to software can help customers successfully meet their specific motion control needs.

NOTE: *All specifications have been carefully checked and correspond to the present manufacturing status but, we cannot guarantee that they are totally free of error. We reserve the right to make changes in this specification without prior written notification.*