

Series 2600XM Automation Controllers

Compact, High Performance Control Systems



The 2600 Series Automation Controllers are high performance control systems which accept a wide range of plug-in modules to accommodate specific applications. These controllers, capable of the combined control of machine sequencing, motion control, networking and analog data acquisition, use advanced technology to significantly increase performance and decrease applied costs. Supplied in an easily panel-mountable format, the 2600 Series accepts a variety of modules, including:

Models 2201, 2202, and 2203 DC Input and Output Modules
Model 2204 Thumbwheel/Display Module
Models 2205 and 2206 Single or Dual-axis Stepping Motor Modules
Models 2207 and 2209 Analog Input and Output Modules
Model 2208 High Speed Counter Module
Models 2210 and 2211 AC Input and Output Modules
Model 2212 8-channel Relay Module
Models 2213 and 2215 Precision Analog Input and Output Modules
Models 2214 and 2219 Dual-axis Servo Control Modules
Model 2216 Dual Channel RS-232 Module
Model 2217 Ethernet Communications Module
Model 2218 16-in/16-out Customization Module

The performance of the 2600 Series is considerably enhanced through the use of a highly-integrated 16 bit processor, providing response times as fast as 1ms. This performance level, combined with the controller's 24K user memory capacity and extended I/O and step capacities, make the 2600 Series appropriate for applications usually requiring systems costing several times more.

Programming is accomplished using CTC's "Quickstep™", a powerful automation language which dramatically reduces programming time. Software capabilities include the ability to simultaneously run up to 28 independent tasks, and the instruction set includes high-level motion control commands, as well as time delay, input monitoring, math and data manipulation commands. These commands make full use of such internal resources as the controller's Non-volatile and Volatile Registers, user-definable Data Table, Input-linkable Counters and 32 Flags.

The 2600 Series also offers strong communications and networking (Ethernet) capabilities, making this controller family a powerful ally for those involved in demanding automation projects.



Capacities* (model 2600/2600-10)

| | |
|-----------------------|---------|
| Module slots | 5/10 |
| Inputs (slot limit) | 160/320 |
| Outputs (slot limit) | 120/240 |
| Analog inputs | 80/160 |
| Thumbwheels (4-digit) | 16 |
| Numeric displays | 8 |
| Stepping motor axes | 10/16 |
| Servo axes | 10/16 |
| RS-232 channels | 11/17 |

*not mutually inclusive

Instructions Supported

- Cancel other tasks
- Clear flag
- Count down
- Count up
- Delay
- Disable counter
- Do (multitasking)
- Done
- Enable counter
- Goto
- If
- Monitor
- Profile motor
- Profile servo
- Reset counter
- Rotate flags
- Search and zero motor
- Search and zero servo
- Set flag
- Shift flags
- Start counter
- Stop (controller)
- Stop motor
- Stop servo
- Store (data movement & math)
- Test and set flag
- Turn motor
- Turn servo
- Zero motor
- Zero servo

For More Information

Further detailed information about Control Tech. products and the Quickstep™ language may be obtained from our staff of Systems Specialists — call the number below for further information.

Control Technology Corporation

25 South Street
Hopkinton, MA 01748

Telephone (508) 435-9595
Toll Free (800) 282-5008
FAX (508) 435-2373
email help@control.com

See us on the World Wide Web:
<http://www.control.com/>

Specifications

| | Min | Typ | Max | |
|---|-------|-------|-------|-------|
| Ambient Temperature operating | | | 50 | °C |
| storage | | | 80 | °C |
| A.C. Voltage Range | | | | |
| 120 V. mode 50/60Hz | 90.0 | 120.0 | 132.0 | VAC |
| 240 V. mode 50/60Hz | 190.0 | 240.0 | 264.0 | VAC |
| Current Requirement | | | | |
| 120 V. mode | | 0.1 | 0.5 | Amp |
| 240 V. mode | | 0.05 | 0.25 | Amp |
| Power Supply Capacities | | | | |
| +24 V. I/O Supply | | | 1.0 | Amp |
| +5 V. Logic Supply | | | 3.0 | Amps |
| CPU Power Requirement (5 V.) | | 0.2 | 0.25 | Amp |
| User Memory Capacity (11 Year Lithium-cell RAM) | | | 24K | Bytes |

These controllers use a 80C196 processor running at 12.288 MHz

Typical Performance Specifications

| | Typ | |
|---|-------|-----|
| Sense input, jump to new step, change output | 1 | ms |
| Perform multiplication (between volatile registers) | 1 | ms |
| Change servo profile | 2.5 | ms |
| Time delay duration, 10 mS programmed | 11.0 | ms |
| Time delay duration, 1 S. programmed | 1.002 | sec |
| Internal count rate | | |
| up to 3 inputs being counted | 500 | Hz |
| 4 to 6 inputs being counted | 250 | Hz |
| 7 to 9 inputs being counted | 166 | Hz |

Note: Performance specifications shown are with one task running. RS-232 communications may degrade count by up to 10%.

Programming Resources

- 488 Volatile Registers – for the temporary storage of numeric data, 32-bit capacity (integers in the range of -2,147,483,648 to +2,147,483,647).
- 500 Non-volatile Registers – similar to the above, except with indefinite retention of data during power-down.
- 8000+ element Data Table – a two-dimensional array of numbers, capable of storing numbers in the range of 0 to +65,535.
- 8 Input-linkable Counters – each may be programmed to automatically monitor any three inputs to perform “count-up”, “count-down” and “reset” functions, at rates to 500 Hz.
- 32 Flags – bistable (“set” or “clear”) memory elements used to store events or communicate between tasks. Instructions “shift” and “rotate” also allow their use as shift registers.
- Unlimited Timers – fixed or variable time delays down to 10 ms level.
- Message Transmitting – of stored messages, with data, via RS-232 port.
- Group I/O Access – inputs and outputs may be accessed as 8-bit, 16-bit or 32-bit binary words.
- Millisecond Counter – free-running, user-resettable timer useful for timing operations or cycles to millisecond levels.
- Indirect Addressing – I/O and registers may be indirectly addressed for iterative access.
- 1024 Program Steps – each step defines the state of the process for a period of time. This is unlike the far more limited definition of “step” used by other systems.