

Product Review



Future Design Controls, Inc. offers a broad range of standard & OEM custom temperature and process control, recording and operator interface products for industrial, medical and scientific machinery and equipment. Both our standard products and custom OEM's solutions offer the most recent microprocessor technology, high reliability and features to help our customers grow their business.

Solutions range from simple single board controls, single loop PID DIN controls, Recorders [circular, strip & paperless] to sophisticated multi-loop PID with Color Touch Screen interface; Data Acquisition and Operator Interface solutions are available in both Windows 7 and CE operating systems.

- Single-loop controls: Board Level and 1/32 through 1/4 DIN panel mount
- Profile loop controls: up to 9 profiles with up to 64 segments per profile, up to 4 control outputs; 1/16 & 1/4 DIN panel mount
- FM Approved High Limit Controls: DIN Rail mount, Surface mount and 1/16 & 1/4 DIN panel mount
- Custom Multi-loop Control Solutions
- nCompass Color Touch Screen Operator Interface and SCADA Control System
- Data Acquisition in Windows 7 and CE operating systems
- Temperature & Process Recorders
 - Circular Chart Recorders - Traditional ink or Thermal Print your Own Chart
 - Strip Chart
 - Paperless Recorders

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Process and Temperature Loop Controls

Whether your needs are for low cost temperature or process control, powerful recipe (profile ramp-soak) controls or safety related FM approved temperature limit devices Future Design Controls offers a cost effective solution. High performance single loop controls include panel mount (1/32, 1/16, 1/8 & 1/4 DIN) DIN rail mount, board level and even custom designed control solutions.

The 100, 300, B, P and L Series controls offer high performance temperature & process control. Common features include:

- High accuracy (18-bit input & 15-bit output resolution) and 200 ms scan rate resulting in superb process control.
- Unique “Home Page” configuration provides user flexibility & ease of use by allowing the most significant parameter prompts to display in sequence with scroll key action.
- Control Output: Relay, SSR, Triac, mA and VDC PID control, retransmission, RS485 communication, transmitter power supply.
- Control strategies: Fuzzy Logic Auto-Tune PID, Soft Start SP Ramp, Bumpless Auto-Manual and more.
- Power input 90-250VC or optional 11-26VDC/VAC.
- Programming port available for PC connection allowing quick set-up
- Agency approvals include UL, CSA, CE, RoHS and in addition FM for Limit controls.

Note: L Series FM approved limit controls do not offer PID output, offer limited “Home Page” options; Series 7L has other limitations

300 Series: Models 2500, 9300, 8300 & 4300 (from \$206)

- Universal temperature & linear (mA & VDC) process inputs
- 2nd input (configurable as: 2nd PV, Remote Setpoint or current transformer input)
 - When configured as 2nd PV, configurable to control & display PV1, PV2 or delta; alarm always available for both PV1 & PV2.
- Control Outputs - up to 4
- Fuzzy Logic Auto-Tune PID; two sets of PID values can be used
- Transmitter Power Supply options
- RS485/232 communications
- Analog retransmission options: PV, SP or Percent Output
- Security: DIP Switch lockout options
- Event Input - configurable for 1 of 12+ functions can be selected
 - Select 2nd set of PID values, remote SP active, 2nd set of PID values active, SP2 active, reset alarms (if configured for latching), disable outputs, lock all parameters and more.



100 Series: Models C21, C91, 9100, 8100, 4100 & B Series (from \$139)

- Universal temperature inputs (optional linear mA/VDC inputs)
- Control Outputs - up to 3
- Fuzzy Logic Auto-Tune PID
- Transmitter Power Supply options
- RS485/232 communications
- Analog Retransmission options: PV & SP
- Security: software lockout



P Series Profile Ramp/Soak: P91 and P41 (from \$221)

- Universal temperature inputs (optional linear mA/VDC inputs)
- Control / Event Outputs: up to 4
- Fuzzy Logic Auto-Tune PID; two sets of PID values can be used
- Transmitter Power Supply options
- RS485/232 communications
- Analog retransmission options: PV or SP
- Security: software lockout
- Profile ramp-soak features include:
 - 9 Programs
 - Segments - up to 64 segments per program
 - Event Input - 1 of 8 functions can be selected:
 - Profile run, hold, abort, segment advance, change to manual mode, failure transfer, all outputs off & select 2nd set of PID values.
 - Configurations: multiple global, per program & per segment configuration settings including PID selection



FM Approved Limit Controls: L41, L91 and Series 7L

- L41 and L91 (1/4 & 1/16 DIN Limit Controls (from \$180)
 - Universal temperature inputs (optional linear mA/VDC inputs)
 - Control Outputs - up to 2 (includes alarm silence)
 - Configurable Display to read SAFE
 - Event Input for Remote Reset (L41 standard; L91 optional)
 - Transmitter Power Supply options
 - RS485/232 communications & analog retransmission

- Series 7L DIN Rail or Surface mount Limit Control (from \$139)

- Easy to use Analog Setpoint (combination F/C)
- Event Input for Remote Reset (standard)
- LED annunciation when in alarm condition
- Multiple ranges, temperature & power inputs

Note: the Series 7L is an analog device without many features described at top of this page



Temperature Control Model 9090 and Legacy Analog Controls

Model 9090: 1/16 DIN Temperature Control (from \$180) (over 300,000 sold worldwide since 1994)

- Updated 2008 design with high performance 18-bit analog input with same form, fit & function as original design.
- Same enclosure & wiring connections since 1994
- One control output with optional alarm
- Fuzzy Logic Auto-Tune PID
- Simple to use, simple to configure

FDC-9090



Legacy Analog Controls:

900, 800 & 400 Series and Series 8

- Easy to use Analog based DIN, surface & board level controls
- Built in "laser trim" ASIC technology
- Wide selection of sensor, temperature & power input ranges
- Series 8 offers 20 amp SPDT Relay

Analog Controllers



FDC Series 8



Recorders and Data Acquisition

DR5000 Circular Chart Recorder from \$600

- 1 or 2 pen recorder
- Use Partlow or Honeywell charts
- No manual required for setup
- "Self Documents" setup configuration
- Universal Input: t/c, RTD, mA, VDC
- Optional alarm relays
- Optional display
- Optional Battery to provide up to 48 hours of recording during power loss (24 hour operation with optional display)



VR Series Paperless Recorders from \$999

- Large High Resolution Display
 - 6.4" TFT 640 x 340 resolution
- Size: 100mm DIN Panel cutout with shallow 6.8" depth
- Input & Output Options
 - Analog Input: up to 18 inputs (Universal t/c, RTD, mA, VDC (18-bit))
 - Analog Output: up to 9
 - Digital Output: up to 24
 - Digital Input: up to 36
 - Transmitter Power Supply (qty 6 24VDC @30mA)
- Encrypted Data and PC Observer Software is standard
- Ethernet is standard, optional RS485 Modbus RTU
- 1 GB CF memory card standard, 2GB optional
- Math Functions (includes timer, counter, totalizer & Security)
- Panel Mount or optional Bench Mount



CR06 100mm 6-channel Strip Chart from \$1,500

- Brilliant 6-color printing
- Universal Input: t/c, RTD, mA, VDC
- Large LED display (.71")
- NEMA 4X & RS232 are standard
- DIN panel cutout w/6" panel depth
- Options: RS485, 6-Relay out and 3-Digital Inputs



PR Series Paperless Recorders from \$999

- 4.3", 5.6" & 12.1" Touchscreen
- Custom Graphic Display Views
- Scan Rate: 100ms all Analog Inputs (48 max), Digital Inputs & External Channels (96 max)
- Batch Functions (Data Log)
- Web Server / Email on Alarm
- Math Functions (includes timer, counter, totalizer & Security)
- Security / Operator Audit Trail
- Digital Inputs / High Frequency Pulse
- Print Directly to Printers; Local or Network
- Free Hand Messaging on Touch Screen
- Circle Chart View (PR30 only)
- Encrypted Data and PC Observer Software is standard
- Ethernet is standard, optional RS485 Modbus RTU
- SD slot and two USB ports
- Panel Mount or optional Bench Mount
- 21 CFR21 Part 11 FDA Requirements
- AMS2750E Heat Treating Requirements



EnVision PC based SCADA Software - FREEWARE

- Up to 128 FDC devices may be connected each with their own data log file as well as on system data file of any combination of devices.
- Configurable Data Save, Real Time Trends, Alarm log, Digital values, 3 levels security and more!
- Built in data viewer allows viewing of any data file in a spreadsheet & graphically by selecting cells & press "plot" button
- Supports Windows 2000, XP Pro, Vista, Windows 7 & 8



nCompass LC / CM / MC and Orion-Mi Control Systems

The nCompass LC, CM and MC Control Systems are advanced 4.3" color touch screen single & multi-loop, monitor point and logic controller with integrated LAN features. The Orion-Mi offers 7" & 10" touch screens with up to 15 loop controls. Both nCompass and Orion-Mi offer data acquisition, recipe (ramp/soak), alarm, audit trail file management, multi-level user rights based security, powerful LAN features and more.

The Orion-Mi and nCompass CM allow up to 15 or 3-loop controls, 15 monitor inputs (t/c, RTD or linear mA/VDC), 16 digital inputs & 32 digital outputs providing a flexible, low cost easy to use touch screen control and SCADA solution.



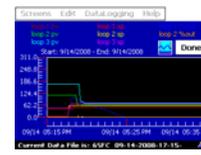
From simple single loop (15 max) to interactive Cascade, Humidity calculation, Profile Ramp/Soak programs to complex loop alarm, system alarms and DI/DO logic & sequencing, the Orion-Mi & nCompass provide SCADA control systems.

Windows style menu bar, nCompass "slide-nav" icon navigation, easy configuration of only those features necessary and screen content help provides intuitive ease of use. nCompass is an international product configurable in one of 28 languages.

Menu Drop Down



Historical Data View



Icon Navigation



Integrated Control Solution

- Process Control
 - Orion-Mi (up to 15 loops)
 - nCompass LC (1 or 2 loops)
 - nCompass CM & MC (up to 10 loops)
- Note: Orion-Mi & nCompass CM Support Cascade & Humidity logic
- Data Acquisition: up to 15 loops (SP, PV & PID % out) and 15 monitor points
- Digital Input/Output (I/O): up to 16 digital & 32 digital outputs configurable as alarms, events and logic I/O with timer functions
- Ramp-Soak Recipes: up to 99 segments and up to 32 events, step "wait for" logic and more
- Alarm Management: Files created every day an alarm occurs
- Security:
 - multi-level with user rights
 - operator audit trail

LAN Features (Ethernet)

- Remote Access via VNC protocol to GUI from PC's, PDA's or other Windows enabled devices
- Email/SMS upon alarm condition
- Email Historical Data, Alarm and Audit Trail files on-demand.
- FTP Historical Data file transfer
- Web Page (view only) with all data shown
- Connect to National Time Server (NTS) to update exact & accurate system time to internal Real Time Clock (RTC)

PC view of Orion-M utilizing Remote Access & Web Page view



Graphic User Interface (GUI)

- TFT 4.3", 7" & 10" Color Touch Screen
- Windows CE computers with LAN features
- Simple access for loop & monitor points
- View & Print live Trends, Historical Data, Alarm and Operator Audit Trails
- File Transfer via USB, email and FTP

Flexible Configuration & Use

- Orion-Mi:
 - Windows style Menu Bar and Menu dropdown
- nCompass LC, CM and MC
 - Slide-nav finger, similar to smart phones or traditional menu dropdown
- Configurable Home Page (Main View)
- Configurable Data Acquisition History Viewer, full support of operator events (notes) and digital signatures
- Help Menu bar (Orion-Mi) or icon (nCompass) provides screen view specific Help configurable in multiple languages

Custom OEM Solutions

Future Design Controls has developed numerous custom OEM control solutions.

These custom solutions vary from board level controls that may evolve into standard products, custom versions of our standard DIN controls & recorder products to proprietary Windows CE Color Touch Screen computers & PLC's.

Shown below are images of what are now standard products and proprietary controls.



Contact us today to explore custom design control system

I/O and Gateway Products

FDC-IO Modules offer Analog & Digital IO modules (Modbus RTU slave) for data acquisition and other applications offering reliable low-cost solution for distributed IO applications to PLC's, HMI's and/or other PC based SCADA systems



PC-E Protocol Converter (Serial Modbus to Ethernet) is an interface to bridge Serial Modbus devices to computer hosts running Modbus/TCP on Ethernet networks.

The PC-E may be connected to multiple serial Modbus devices and multiple PC-E converters may be connected to Ethernet networks.

