



4400

Multi-Program Profile Control

1/4 DIN Profile Controller

DESCRIPTION

The 4400 is a 1/4 DIN microprocessor based, single loop process controller with programmable setpoint programs.

It can function either as a basic process controller, utilizing manual setpoint changes, or it can execute any one of eight setpoint programs. Each program is adjustable in the range of 1 to 16 segments and are cascadable to a maximum length of 121 segments. Each segment may be a ramp, a dwell, a join or an end.

A delayed start feature is standard as is an end of program relay. By using the auto-hold feature, assured dwells are possible.

The instrument can include two 4-20mA current outputs which can be used for control and a third current output to be used for retransmission. In lieu of current control outputs, relays or SSR drivers are available.

Four event outputs (relay) are available as an option.

APPLICATIONS:

Programmable profile device stores and implements temperature control sequences including ramp/soak profiles using exclusive PID techniques.

INDUSTRIES

- Industrial and lab ovens/furnaces, plastics and thermal forming
- Form/fill and seal
- Packaging applications
- And any others where low costs, smaller size and unmatched connectivity are critical requirements.

FEATURES/BENEFITS

- Dual, 4-digit, LED displays
- 1/4 DIN panel mount
- Universal Input for thermocouple, RTD, DC linear mA/V/mV user-selectable
- Sensor fault detection
- Up to 3 outputs; relay, 4-20mA, SSR driver, Triac
- Control, alarms (process, deviation/band); retransmission output functions
- PID, ON/OFF, profile (ramp/dwell) control
- Optional RS-485 serial communications
- Program security

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SPECIFICATIONS*

STANDARD FEATURES

- Dual Display for fast view of process and control parameters
- Full PID capability
- OR, AND alarm output via relay
- Universal input for voltage, current, thermocouple and RTD
- Profile Cycling
- Program loading via communications port

ENVIRONMENTAL CHARACTERISTICS

- Operating Temperature:** 0 to 55°C
- Storage Temperature:** -20 to 80°C
- Humidity:** 20 to 95% non condensing

ELECTRICAL

- Line Voltage:** 90 to 264VAC 50/60 Hz (standard)
20 to 50V AC 50/60Hz or 22 to 65V DC (optional)
- Power Consumption:** 4 Watts
- EMI Susceptibility:** Designed to meet EN50082 Part 2
- EMI Emissions:** Designed to meet EN50081 Part 2

INPUT

- Thermocouple types:** R, S, J, T, K, L, B, and N
- RTD:** 100 ohm (.00385 ohm/ohm/C)
- Volts:** 0 to 5VDC, 1 to 5VDC, 0 to 10VDC and 2 to 10 VDC
- Millivolts:** 0 to 50mVDC and 10 to 50mVDC
- Milliamps:** 0 to 20mADC and 4 to 20mADC
- Source Resistance:** 1000 ohm maximum (thermocouple)
- Lead Resistance:** 50 ohm per lead maximum balanced (Pt100)
- Sensor Fault Detection:** Displays an alert for thermocouple or RTD inputs and sensor break, SnSr.
Control outputs set to OFF (0% power); alarms operate as if the process variable has gone over-range (TC) or under-range (RTD & V, mV, mA)

OUTPUTS

- OUTPUT 1 & 2**
- Relay:** SPDT; 2.0 A Resistive at 120/240 VAC
- SSR Driver:** > 4.2V DC into 1K ohms minimum
- Current Output:** 0 to 20mADC into 500 ohms max; 20mADC into 500 ohms max
- Volts DC Output:** 0 to 10VDC 500 ohms minimum; 0 to 5VDC 500 ohms minimum
- Transmitter Power (output 2 only):** 20 to 28VDC (24VDC nominal); Load Impedance: 910 ohms (22mA @ 20VDC)
- Triac Output:** 1 amp @ 40°C derated to 1/2 amp @ 80°C

OUTPUT 3

- Relay:** SPDT, 2.0 A Resistive at 120/240 VAC
- SSR Driver:** > 4.2V DC into 1K ohms minimum
- Current Output:** 0 to 20mADC into 500 ohms max; 4 to 20mADC into 500 ohms max
- Volts DC Output:** 0 to 10VDC 500 ohms minimum; 0 to 5VDC 500 ohms minimum
- Transmitter Power (optional):** 20 to 28VDC (24VDC nominal); Load Impedance: 910 ohms (22mA @ 20VDC)
- Triac Output:** 1 amp @ 40°C derated to 1/2 amp @ 80°C

DISPLAY

- Digital Display:** Four 7 segment LEDs, top .53" high; bottom .36" high; message .19" high; profile/segment .25" high
- Status Indicators:** Individual LED indicators for Output 1, Output 2, Manual, Alarm, Pre or Auto Tune, Run, Hold, Times 60 Time Base, and Event 1 thru Event 4

ALARM

- Process Alarm:** ± Input Span
- Deviation Alarm:** ± Input Span
- Deviation Band Alarm:** 0 to Input Span

CONTROL

- On/Off Hysteresis:** 0.1% to 10.0% of Input Span
- Proportional Band:** 0 (Off), 0.5% to 999.9% of Input Span
- Manual Reset:** 0% to 100% of Output Power
- Auto Reset:** 1 sec to 99 min 59 sec/repeat and OFF
- Rate:** 0 sec to 99 mins. 59 sec
- Cycle Time:** .5, 1, 2, 4, 8, 16, 32, 64, 128, 256, and 512 seconds
- Deadband/Overlap:** -20% to +20% of PropBand 1 + PropBand 2

PROGRAM SPECIFICATIONS

- Programs:** Eight, each with free-form segments
- Length of Program:** 1 to 16; cascadable max of 121 segments
- Segment Types:** Ramp, Dwell, Join, Repeat or End
- Program Cycling:** 1 to 9999, infinite
- Delayed Start:** 0 to 99 hrs 59 mins
- Control:** Run, Hold, Abort, Time Base x60 (local/remote); select program (local/remote); jump to next segment

- Start From:** Current process variable or controller setpoint value, user selectable
- End On:** Final Value or Controller Setpoint, user selectable

PERFORMANCE

- Measurement Accuracy:** ± 0.25% of span, ± 1 LSD at 20 deg C
Note: Reduced performance with Type "B" thermocouple between 100-600C (212-1112F)
- Ambient Temperature Error:** 0.01% of span / ° C change in ambient Linearization Accuracy Better than ± 0.2 deg C any point, (TC and RTD) any 0.1 deg C range (± 0.05 deg C typical). Better than ± 0.5 deg C any point, any 1 deg C range
- Cold Junction Compensation:** Better than ± 0.7 deg C
- Noise Rejection:** Common mode: >120dB at 50/60Hz giving negligible effect at up to 264V 50/60Hz
Series Mode: >500% of span (at 50/60Hz) causes negligible effect
- Dimensions:** Front panel: 96mm x 96mm (3.78" x 3.78") 100mm deep
- Weight:** 16 ounces maximum
- Front Panel Sealing:** IP65/NEMA4

DIGITAL COMMUNICATIONS

- Type:** RS-485 serial communication port:
- Protocol:** MODBUS/RTU or West ASCII

PHYSICAL DIMENSIONS

- Dimensions:** 1/4 DIN front panel, 100mm (3.9") deep
- Front Panel Rating:** NEMA 4/IP65
- Weight:** 454 g. (16 oz.) maximum

STANDARDS

- CE, UL & cUL recognized (E67237)

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West Brand 4400 Data Sheet (11/05)

Customer Service +1 800.390.6405 • Technical Support +1 800.866.6659
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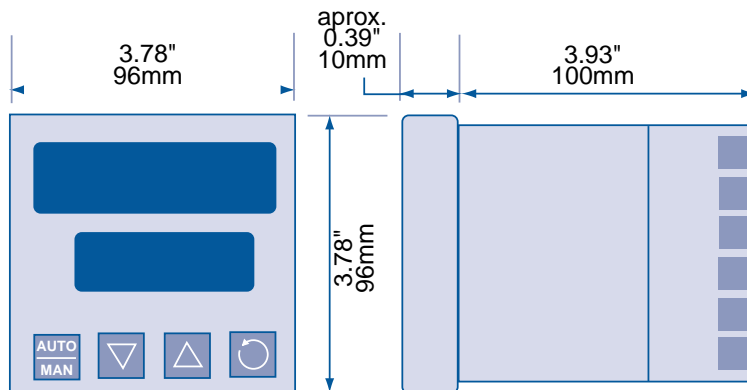
Controllers

MODELS

Code 1: Model #	Code 2: Input Type	Code 3: Output 1	Code 4: Output 2	Code 5: Output 3	Code 6: Options	Code 7: Event Out.	Code 8: Remote	Code 9: Clock
N4401Z	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1/4 DIN Indicator with Alarm Function	1 3 Wire RTD or DC mV 2 Thermocouple 3 DC mA 4 DC Voltage	1 Relay 2 DC for SSR 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA Triac*	0 Not Fitted 1 Relay 2 DC for SSR 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA 8 Triac*	0 Not Fitted 1 Relay 2 DC for SSR 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA 8 Triac*	00 None 10 RS-485 Serial Communication 02 24V AC/DC Line Voltage 12 RS-485 Serial Communication and 24V AC/DC Line Voltage	0 Not Fitted 1 Event Outputs	0 Not Fitted 1 Remote Program Control	0 Not Fitted 1 Real Time Clock

* Two Triac Outputs, max.

DIMENSIONS - 1/4 DIN



Panel Cutout: 92.0mm x 92mm (3.62" x 3.62")

Headquarters: 1675 Delany Road • Gurnee, IL 60031-1282 • USA
Phone: +1 847.662.2666 • Fax: +1 847.662.6633

Satellite Locations:

North America: North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands • **Europe:** United Kingdom, Italy, France, Germany, Spain, Slovakia • **Latin America:** Brazil • **Asia:** China, Japan, Korea, Singapore

Customer Service:

Tel.: +1.800.390.6405
Fax: +1.910.879.5486
west.custserv@dancon.com

Technical Support

Tel.: +1.800.866.6659
Fax: +1.847.782.5277
west.techsupport@dancon.com



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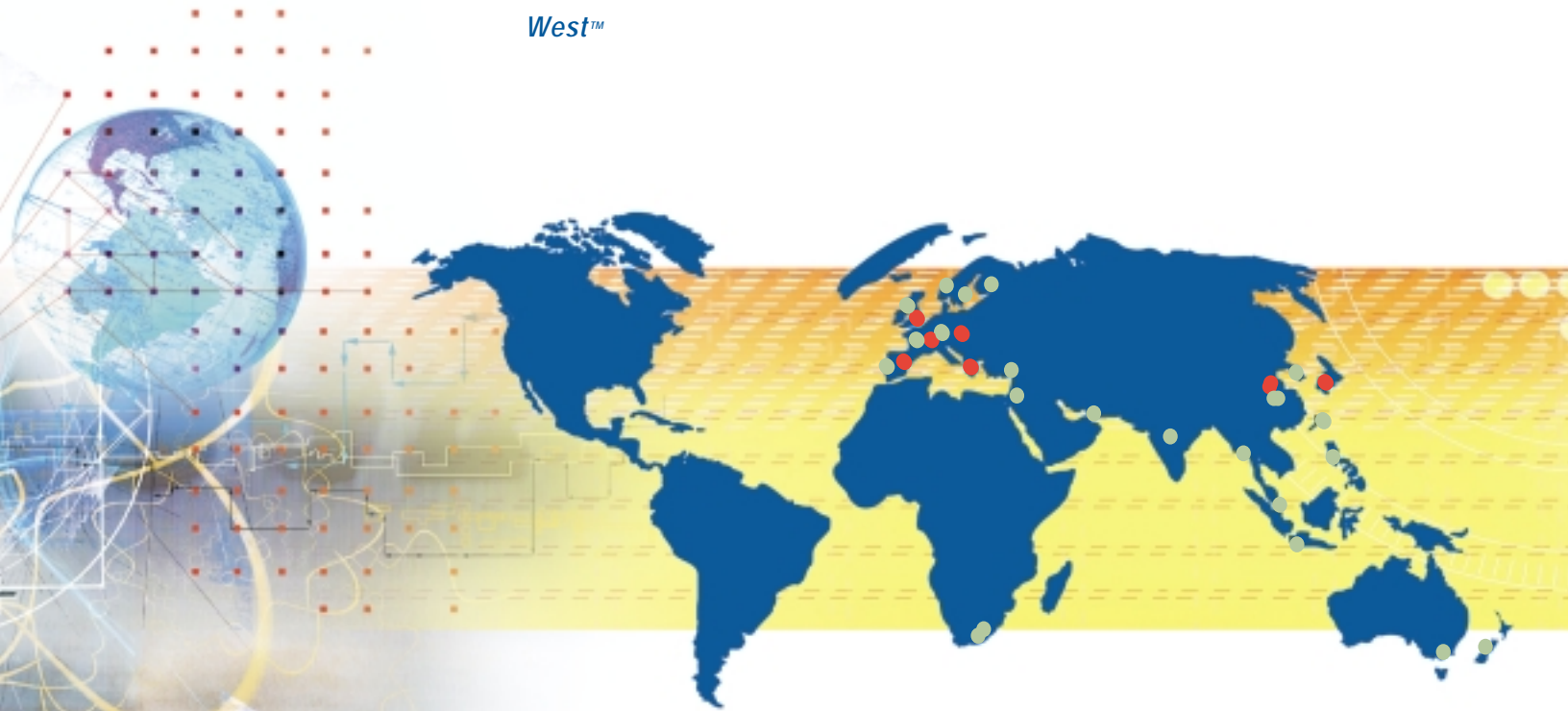
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More Available. With factories around the world, global sales and applications support, and an expansive network of distributors, we stay close to our customers - shortening lead times and fostering responsiveness. Three-day lead time is standard, with same-day shipments available on many of our products.

More Selection. We have a broad selection of controllers to meet application requirements in a variety of industries. User-configurable, accurate and flexible, with low, mid, or high level performance ranges, our controller products meet your system and budgetary requirements.

More Reliable. Our experience with more than 25,000 customers has taught us to design controllers that are reliable and durable, with quality standards that meet six sigma requirements.

For additional information or a full-line catalog, contact DICG Customer Service or visit our web site.

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