

UDC 3300 Universal Digital Controller: Power and Flexibility Combined with Ease of Use



New Power and Flexibility

The UDC 3300 Universal Digital Controller packs new powerful features in the popular 1/4 DIN size while retaining all the simplicity, flexibility, accuracy and industry-leading MMI of the UDC 3300. For the many thousands of satisfied UDC 3000 users, the UDC 3300 is totally downward compatible to existing UDC 3000 applications and installations. It even uses the same case.

Unmatched new application power includes: two universal analog inputs, two loops of control, two Math equations, two characterizers and a totalizer. When these are combined with the new Accutune II™ tuning with fuzzy logic overshoot suppression, the result is price/performance leadership.

Application flexibility is assured by the universal analog inputs, universal AC power supply, two digital inputs, RS422/485 ASCII or Modbus RTU communication protocols, simple configuration plus total field upgrade capability for any optional feature.

A new and innovative Maintenance & Diagnostic tool available with Expanded UDC 3300 controllers is Healthwatch, a low-cost software program that puts maintenance and diagnostic data at your fingertips so you can monitor vital performance activities to improve your process, predict equipment failure, and minimize downtime.

Features/Options

- **Universal Inputs** – Up to two isolated universal inputs, accepts thermocouple, RTD, mA, mV and volt input types. All input types are configurable without switches and there is no need to calibrate. The two inputs can be optionally combined to provide direct calculation of Carbon Potential, % Oxygen, or Percent Relative Humidity. As an optional feature, the second universal input can be converted into two separate 1-5 volt/4-20 mA high level inputs to provide a total of three analog inputs.
- **Math Functions (Optional)**
 - Feedforward Summer (Standard)
 - Summer/Subtractor
 - Weighted Average
 - Multiplier/Divider
 - Feedforward Multiplier
 - Hi/Lo Select
 - Two Characterizers
 - Totalization



UDC 3300 Controller has sealed faceplate suitable for hosedown

- **Two Loops of Control (Optional)**
Two independent loops or internally cascaded loops in one device.
- **Accutune II** – This feature provides a plug-and-play tuning algorithm that will accurately identify and tune any process, including deadtime and integrating processes. Accutune II speeds up and simplifies start-up, and allows retuning at any setpoint.
- **Fuzzy Logic** – This new feature suppresses process variable overshoot resulting from setpoint changes or externally induced process disturbances. It operates independently from Accutune II tuning, and it does not change the PID constants, but temporarily modifies the internal controller response to suppress overshoot. This allows more aggressive tuning to co-exist with a smooth process variable response. Fuzzy logic can be enabled or disabled depending on the application or the control criteria.
- **Universal Outputs** – UDC 3300 provides “out-of-the-box” operations, with no need to open the case. There are no jumpers to connect, no switches to set, and no required hardware configuration.
- **Heat/Cool Capability** – Provides split-range control with independent PID tuning constants for heating and cooling, plus mixed output forms.
- **Two Digital Inputs (Optional)**
 - User configurable with 24 selections.
- **One or Two Current Outputs**
 - 4-20 mA
 - Isolated
- **Serial Communications (Optional)**
 - RS422/485 – ASCII
 - Modbus RTU
 - DMCS
- **Transmitter Power** – Provides up to 30 volts DC to power a 2-wire transmitter.
- **Alarms** – 1 or 2 fully configurable alarms to alert you of critical process conditions.

- **Setpoint Ramp** – A configurable ramp rate or a single programmable setpoint ramp-up to 4¼ hours adds to start-up flexibility.
 - **Setpoint Programming (Optional)** – Allows you to store six ramp and six soak segments for setpoint programming. “Run” or “Hold” of program is keyboard or remote switch selectable.
 - **Timer** – Activates Alarm One following a configurable time period that can be started via Alarm Two, the keyboard, or a digital input.
 - **Limit Control** – A limit control model has a latching relay which is activated when the process variable goes above (High Limit) or below (Low Limit) the setpoint. An alarm message is displayed when the output is activated. Reset of the latching relay is through the keyboard or an optional digital input. A factory mutual (FM) approved model is available.
 - **Three Local Setpoints** – Simple push-button selection allows quick switchover from the primary setpoint to one or two alternative setpoints.
 - **Moisture Protection** – IP65/NEMA 3 rated front face permits use in applications where it may be subjected to moisture, dust, or hose-down conditions.
 - **Easy Configuration** – Multi-language prompts lead you through configuration in a logical sequence. A four-digit security code prevents unauthorized changes. You can also configure or operate UDC 3300 from a personal computer with Honeywell LPCS software.
 - **UL Recognition** – All models are optionally available with UL Recognition for process control.
 - **FM Approval** – Controller and Limit models are available with an FM approved option.
 - **CSA Certification** – CSA Certification for Process Control is available as an option on Controller and Limit models.
 - **CE Compliance** – All models are shipped with CE Compliance as a standard feature.
 - **Quality Assurance** – The quality is assured by a rock solid two-year warranty program which features replacement parts or units in the event of malfunction. Comprehensive customer support includes toll-free technical assistance.
- Honeywell provides a complete line of temperature sensors including thermocouples, RTDs, and non-contact sensors that are compatible with the UDC 3300 and other industrial control products.

New **HealthWatch** software option monitors your process via three timers and three counters to provide you with diagnostic data that can help:

- Reduce equipment downtime & increased throughput
- Identify and minimize quality deviations
- Prolong equipment life by monitoring vital functions
- Reduce spare parts inventory
- Reduce operator & maintenance troubleshooting time
- Alarm upon out-of-tolerance diagnostics

Condensed Specifications

Accuracy	±0.20% of span typical (±1 digit for display). Can be field calibrated to ±0.05%.
Inputs	One standard universal/analog input plus one optional isolated universal analog input, or two optional high level analog inputs. (Voltages or Current) Thermocouples (Type B,E,J,K,N,R, NiNiMoly, S,T, W5W26); 100 ohm Platinum RTD; Radiamatic RI/RH; Voltages or Current (0-10mV, 10-50mA, 1-5V, 0-10V, 4-20 mA).
Control Outputs	Current or time proportional simplex or duplex, position proportional or three position step control are available.
Control Algorithms	Configurable for PID-A, PID-B, and PD with Manual Reset, or On-Off control.
Tuning Parameters	Gain or PB (%): 0.1 to 999.9; Rate: 0.08 to 10 minutes; Reset: 0.02 to 50.00 minutes/repeat or repeats/minute.
Power Requirements	90 to 264 VAC, 50 or 60Hz; 24 VAC/DC
Physical Description	UDC 3300 has a metal case with a IP65/ NEMA 3 rated bezel. It requires a ¼ DIN panel cutout of 3.62 inches by 3.62 inches and has a behind panel case depth of 5.8 inches. All power, input, and output wiring is connected to the rear screw terminal panel.

Honeywell



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