Honeywell

Section D — Digital Controllers and Indicators

Contents

Digital Controllers and Indicators

Overview

Introduction

In addition to those listed in the Recorders and Indicators section of this catalog, Honeywell offers other controllers for industrial and commercial applications.

Both digital and analog controllers are included in this section.

A description, a decision tree, and a Summary Specification are provided to permit easy selection of the best controller for your process. Refer to the Specification sheet for additional information.

Description

LEADERLINE MICROPROCESSOR-BASED DIGITAL CONTROLLERS

Honeywell's LeaderLine Microprocessor-based Digital Controllers have what it takes to set the industry pace. Together they comprise a full-range product offering. Individually each is at the top of its class. In addition, these controllers offer you numerous options so that no matter which LeaderLine controller you select, you can customize it to suit your application precisely.

Whether you need a simple, basic function controller ... a versatile mid-level unit ... or a super-sophisticated model designed for the most demanding applications, you'll find the instrument that's right on target in the LeaderLine. Best of all, you'll find it at a price certain to make even the most skeptical purchasing agent do a double-take.

Even though the LeaderLine controllers vary in specifics, they are essentially the same. All offer ease of use through simple prompts, logical display sequences, configurable input ranging, and much more. All are the product of state-of-the-art technology. And all are protected by a comprehensive warranty program, a no-nonsense replacement policy, and a customer support network which includes a toll-free 800 telephone ''Help'' phone number staffed by trained technicians.

All LeaderLine controllers feature a sealed faceplate which provides protection against dust and moisture. An available NEMA4 mounting accessory enables the UDC 2000 and UDC 3300 to be used in hose-down applications.

UDC 700 DIGITAL CONTROLLER

The UDC 700 (1/32 DIN size) is a compact relay/SSR output only controller used in basic thermal applications where space and price are important. It has one display of four digits, 0.1% accuracy, thermocouple or RTD inputs, universal power, and self-tune software. Options include a second alarm relay and communications.

UDC 900 DIGITAL CONTROLLER

The UDC 900 (1/16 DIN size) is a compact relay/SSR output only controller that is used in thermal applications where space limitation and low price are the primary considerations. It offers core functions of two displays of four digits each, 0.5% accuracy, thermocouple or RTD inputs, universal power, and self-tuning software. Options include two event relays, panel or DIN rail mounting, and two remote switch inputs.

UDC 1000 AND UDC 1500 MICRO-PRO UNIVERSAL DIGITAL CONTROLLER

The UDC 1000 (1/16 DIN size) and UDC 1500 (1/8 DIN size) are compact, microprocessor-based controllers that provide Honeywell's high quality and performance at low cost. Their very small size makes them ideally suited for applications where panel space is at a premium, but where performance and versatility are also important considerations. Key features include dual display, NEMA3/IP65 front-face protection, universal input and power, three output types, auto-manual mode, automatic tuning, and RS485 communication.

UDI1500 MICRO-PRO UNIVERSAL DIGITAL INDICATOR

Based on the same technology and appearance as our low-priced UDC 1000 and UDC 1500 controllers, the UDI1500 is the ideal companion for applications requiring performance in control and accurate indication. The UDI1500 is a 1/8 DIN horizontal indicator which combines high quality and clear information at a competitive price. The large display provides immediate process interpretation, and is ideally suited for a large number of applications which require reliability, accuracy, and ease of reading.

UDC 2000 MINI-PRO UNIVERSAL DIGITAL CONTROLLER

When all you need is a basic function controller, the UDC 2000 Mini-Pro is what you want. The UDC 2000 Mini-Pro is Honeywell's LOW COST, HIGH QUALITY microprocessor-based, digital controller. It monitors and controls temperature pressure, flow, level, rotation and other variables in such applications as environmental chambers, plastic processing machines, furnaces and ovens, and packaging machinery.

The UDC 2000 Mini-Pro has a high degree of functionality which belies its low cost. A dedicated configuration display provides plain multi-language prompts for unmatched operating simplicity. The logical sequence of its programmed displays assures quick and accurate entry of all configurable parameters. Simple keystrokes let you change your operating parameters to conform to your process control needs.

UDC 2300 UNIVERSAL DIGITAL CONTROLLER

The UDC 2300 provides all the capabilities of the UDC 2000, plus more, while maintaining the simplicity of the industry-leading HMI. This controller has universal AC power input and isolated inputs and outputs while offering communications, auxiliary current output, and position proportional control.

UDC 3300 UNIVERSAL DIGITAL CONTROLLER

The UDC 3300 has capabilities beyond those of the UDC 2000 Mini-Pro ... capabilities which make it a highly flexible instrument and ideal for your more complex applications. It combines a high degree of functionality with operating simplicity. The bright dual displays with multi-language prompts make the operator interface easy to read, understand and operate.

Programmed sequences of displays assure quick and accurate entry of all configurable parameters. Simple keystrokes let you select input and range configuration, set the operating parameters that meet your process control needs now, and change them later to meet new ones.

The UDC 3300 can also be configured to function as a manual/auto station, and as an automatic backup controller for PLCs or other PID controllers in critical loop applications.

This controller is also available as a single or dual loop controller with up to three inputs and math functions. Optional math functions include: feedforward, summer/multiplier, summer/subtractor, multiplier/divider, input high/low select, gain scheduling, 8-segment characterizer, and totalizer. When combined with the Accutune II tuning and fuzzy logic overshoot suppression, you have price/performance leadership.

UDC 5000 ULTRA-PRO UNIVERSAL DIGITAL CONTROLLER

For the most exacting applications, the UDC 5000 Ultra-Pro is a more sophisticated member of Honeywell's LeaderLine microprocessor-based, digital controllers. It combines the highest accuracy available with unparalleled functionality and performance. This combination addresses the needs of critical processes and complex applications typical of the high performance arena where final product quality, high throughput and minimal scrap of expensive materials are prime considerations.

Bright dual displays and English prompts make the operator interface easy to read, understand and operate. Programmed sequences of displays assure quick and accurate entry of all configurable parameters. Simple keystrokes let you change your operating parameters to conform to your process control needs.

The UDC 5000 Carbon Potential model allows control of furnace atmosphere with a variety of popular carbon probes.

UDC 5300 CONTROLLER

The UDC 5300 controller offers flexibility and performance typically found in controllers much larger than its 1/4 DIN size. The use of function blocks for configuration and a large variety of standard control algorithms allow the UDC 5300 to satisfy the most demanding control applications. The controller is available in models for one or two loops of independent or cascade control, provides up to three universal analog inputs, and offers a diversity of output types. Adding the data storage feature with PCMCIA memory card technology for real time storage of process measurements and operator actions provides an accurate record of control performance. This feature also permits storage and recall of controller configurations, calibration parameters and ramp/soak setpoint programs for batch cycle operations.

UDC 6300 PROCESS CONTROLLERS

The UDC 6300 is a microprocessor-based, stand-alone Process Controller. This price/performance leader combines cost effectiveness with unparalleled accuracy, functionality, and performance.
This combination addresses the needs of continuous process applications such as fuel/air ratio, distillation towers, and compressor control, where product quality, high throughput, and reliability are prime considerations.

User-friendly bargraph displays of Process Variable, Set Point, and Output and English prompts make the device easy to read, configure, and operate.

The UDC 6300 standard features provide ample power and functionality to handle a variety of basic continuous process control strategies at low cost with available options that allow you to upgrade a higher functionality to meet advance control strategies such as 2 Loops of control, Cascade or Feedforward control.

Accutune™ sets Honeywell's UDC 6300 apart by automatically tuning your process control loop for peak operating efficiency. Accutune™ adjusts the PID tuning parameters as necessary while controlling the set point in Automatic control mode. This unique technology requires no process knowledge and it automatically tunes two loops or a cascade loop simultaneously.

Optional communication allows the UDC 6300 to be integrated with the Honeywell TDC 3000 Distributed Control System or configured and monitored from a personal computer.

An Indicator-only version of the UDC 6300 is also available.

ANALOG CONTROLLERS

Direct Sensor Actuated

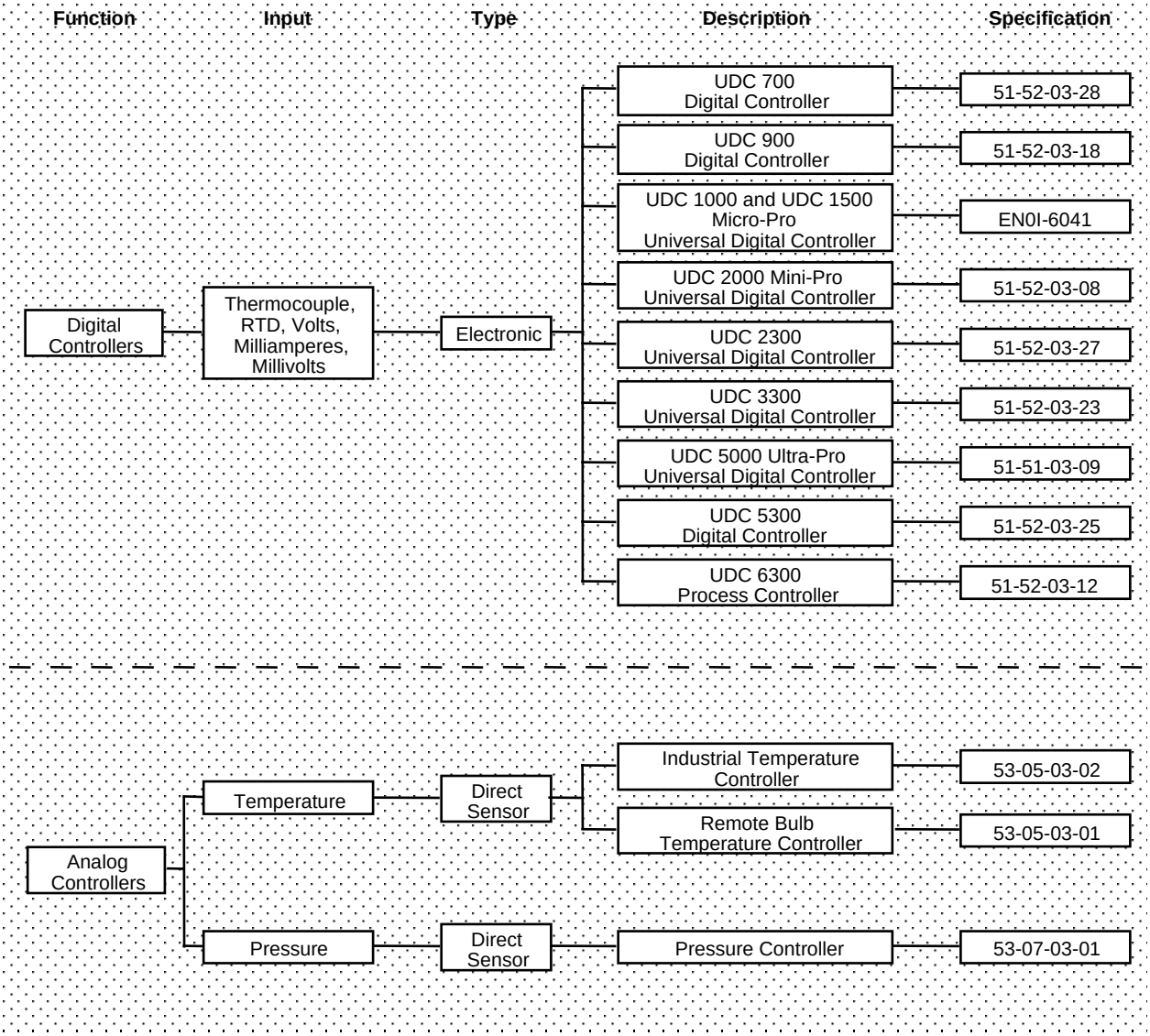
Remote Bulb Temperature Controllers use integral, liquid-filled thermal elements to sense temperature. Snap action, single pole-double throw switches for ON–OFF control, and a potentiometer for proportional control are available. Indicating and non-indicating versions can be flush or surface mounted.

Industrial Temperature Controllers use an integral, thermal system to sense temperature and actuate a single pole-double throw mercury switch for ON–OFF control.

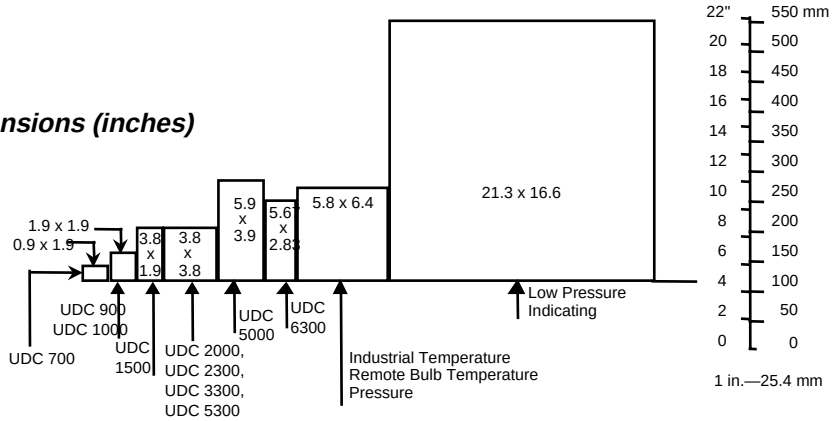
Pressure Controllers use bourdon tubes or a diaphragm to sense pressure. ON–OFF controllers can have single pole-single throw, or single pole-double throw snap action, or mercury switches. The modulating proportioning pressure controller uses a 140 ohm potentiometer. Instruments can be surface mounted.

Low-Pressure Indicating Controllers are used to control furnace and static pressures. Double bell versions for differential pressure and single bell versions for static pressure have pneumatic proportional controllers. Instruments can be flush or surface mounted.

Decision Tree



Relative Bezel Dimensions (inches)



Summary Specification

Model Number	Controller Type	Power	Operating Temperature	Maximum Span	Maximum Input	Specification
UDC 700	Digital—On/Off, Time, 1 input	90-264 Vac, 50/60 Hz	55°C (131°F)	—	—	51-52-03-28
UDC 900	Digital—On/Off, Time, 1 input	85-264 Vac, 50/60 Hz	50°C (122°F)	—	—	51-52-03-18
UDC 1000/ UDC 1500	Digital—On/Off, Current, Time, Duplex Time, 1 input	90-264 Vac, 50/60 Hz 24-48 Vac/dc	55°C (131°F)	—	—	EN0I-6041
UDI1500	Digital Indicator On/Off	90-264 Vac, 50/60 Hz 24-48 Vac/dc	55°C (131°F)	—	—	51-52-03-22
UDC 2000	Digital—On/Off, Current, Time, Duplex Time, 1 or 2 inputs	120, 240 Vac, 50/60 Hz	55°C (131°F)	—	—	51-52-03-08
UDC 2300	Digital—On/Off, Current, Time, Duplex Time, 1 or 2 inputs	120, 240 Vac, 50/60 Hz	55°C (131°F)	—	—	51-52-03-27
UDC 3300	Digital—On/Off, Current, Time, Position Proportional, 3-Position Step, Duplex, 1, 2, or 3 inputs	90-264 Vac, 50/60 Hz 24 Vac/dc	55°C (131°F)	—	—	51-52-03-23
UDC 5000	Digital—On/Off, Current, Time or Position Proportioning, 1 or 2 inputs	120, 240 Vac 50 or 60 Hz	60°C (140°F)	—	—	51-51-03-09
UDC 5300	Digital—1 or 2 Loops, On/Off, Current Time Prop., Duplex, Position Prop.	85-240 Vac, 50/60 Hz	0-55°C (32-131°F)	—	—	51-52-03-25
UDC 6300	Digital—On/Off, Current, Time or Duplex, 3 Position Step, 5 inputs	24 Vdc, 120 or 240 Vac, 50 to 60 Hz	60°C (140°F)	—	—	51-52-03-13
T654A	Snap Action—SPDT	Direct Sensor Actuated	54°C (130°F)	210°C (410°F)	200°C (400°F)	53-05-03-01
T654C	Snap Action—SPDT Adjustable Differential					
T667A	Snap Action—SPDT Fixed Differential					
T954A	140 ohm Potentiometer Adjustable Prop. Band					
T668A	Micro Switch—SPDT	Direct Sensor Actuated	54°C (130°F)	78°C (140°F)	210°C (140°F)	53-05-03-02
P668	Snap Switch—SPDT Single Setpoint	Direct Sensor Actuated	66°C (150°F)	10k	13779 kPa 200 (psi)	53-07-03-01
P634	Snap Switch—SPDT Adjustable, Low Cycling Differential	Direct Sensor Actuated	66°C (150°F)	190k gcm^2 (4500 psi)	41.4 mPa (6000 psi)	
P928	Modulating Proportional	Direct Sensor Actuated	60°C (140°F)	-------- (1800 psi)	16.5 mPa (2400 psi)	