

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курган (3522)50-90-47
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Новыйбурск(3496)41-32-12

Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35

Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

сайт: www.honeywell.nt-rt.ru || эл. почта: hwn@nt-rt.ru

КОНТРОЛЛЕРЫ

Технические характеристики на UDC1500



HONEYWELL

UDC 2800 TECHNICAL SPECIFICATION

The UDC2800 Universal Digital Controller packs new powerful features in the popular 1/4 DIN size.

OVERVIEW

Unmatched application power includes a Bluetooth Configuration interface, two universal analog inputs, and a Math Algorithm. When these components are combined with Accutune IIITM 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, a maximum of two analog inputs and four digital outputs, RS485 Modbus RTU or Ethernet 10/100M Base-T TCP/IP communication protocols, simple configuration plus total field upgrade capability for any optional feature.



UDC2800 Universal Digital Controller

ANALOG INPUTS

The UDC2800 has two analog inputs with a typical accuracy of $\pm 0.15\%$ of full-scale input and a typical resolution of 16 bits. Both analog inputs are sampled ten times per second (every 100 ms).

The first, or Process Variable input, can be one of the various thermocouple, RTD, or linear actuators. Linear actuators have thermocouple, RTD characterization capability as a standard feature. Linear actuators also have square root capability.

The optional second input is isolated and accepts the same actuators as input one.

All actuators and characterizations are keyboard configurable. Cold junction compensation is provided for thermocouple type inputs. Upscale, downscale or failsafe sensor break protection is keyboard configurable. A configurable digital filter of 0 to 120 seconds provides input signal damping.

Thermocouple Health - In addition to the standard configurable upscale, downscale or failsafe output burnout selections, the condition of the thermocouple can be monitored to determine if it is good, failing or in danger of imminent failure

FEATURES AND BENEFITS

- 2 Universal Analog Inputs
- 0.15% Accuracy
- Fast scanning rate (100ms)
- Up to 4 Output Types
- 2 Digital Inputs
- Math Functions
- Ethernet and Modbus communication
- Bluetooth configuration on mobile device
- NEMA4X and IP66 front face protection
- Multilanguage prompts
- 1/4 DIN Size
- Jumper free configuration
- Bright displays with multi-language prompts in English, make the operator interface easy to read, understand, and operate. Simple keystrokes let you set operating parameters that meet your process control needs.

MATH FUNCTIONS

Algorithm—A pre-configured algorithm is available for easy implementation. This includes the capability of using a Ratio and Bias with any input. You can select from the following menu:

- Feedforward Summer—Uses either input, followed by a Ratio/Bias calculation, summed directly with the computed PID output value to provide a resultant output to the final control element.
- Weighted Average —Computes the weighted average of a PV or SP for the control algorithm from two inputs.
- Feedforward Multiplier—Uses any input, multiplied by the calculated PID output to provide a resultant output which is sent to the final control element.
- Summer/Subtractor—Will add or subtract inputs with the result used as the derived PV.
- Multiplier/Divider—Uses the analog inputs to calculate a derived PV. Available with or without Square Root.
- Input High/Low Select—Specifies the PV input as the higher or lower of the two inputs.

DIGITAL INPUTS

Two* isolated digital inputs are provided for remote dry contact closure to select one of the following actions:

- Manual control mode.
- Local setpoint 1, 2, 3, 4.
- Direct controller action.
- Hold SP Ramp/Program.
- Select PID set 2, 3.
- PV = Input 2.
- ReRun - SP Ramp/Program.
- Run - SP Ramp/Program.
- External program reset.
- Disable PID integral action
- Manual mode, failsafe output.
- Disable keyboard.
- Output 1 = Fixed value
- Start Timer.
- Auto/Manual Station
- Initiate Tuning.
- Initiate PV Hot Start.
- Output 1 tracks Input 2.
- To Remote Setpoint.
- PID reset feedback via Input 2
- Purge
- Low Fire
- To Latching Manual Mode.
- PV Hold

Also, the digital inputs can allow one of the following selections to be combined with one of the above selections:

- Select PID set 2.
- Direct controller action.
- Local setpoint 1, 2, 3, 4.
- Disable Accutune
- To Run – SP Ramp/Program

*The 2nd Current Output and the 2nd Digital Input are mutually exclusive. Selection is made via a keyboard entry.

OUTPUTS AND CONTROL

Output Types - The UDC2800 may have as many as five outputs made up of the following types:

- Current Outputs (4-20 or 0-20 ma)
- Open Collector Outputs (Transmitter Power)
- Electromechanical Relays (5 amps).
- Dual Electromechanical Relays (2 amps)

Output Algorithms - The UDC2800 is available with one or more of the following output algorithms:

- Time Proportional provides On-Off or Time Proportional (Relay) output.
- Current Proportional supplies proportional direct current output for final control elements, which require a 4-20mA signal. Output can be easily configured via the keyboard for 0-20mA operation without recalibration.
- Current Proportional Duplex is similar to current proportional but provides a second set of tuning parameters and a split range current output or a second current output via the Auxiliary output option, for the heat and cool zones.
- Time Proportional Duplex - Depending on which control algorithm you select, this duplex output algorithm can provide On-Off Duplex, Time Proportional Duplex. The time proportional duplex output provides independent PID tuning constants and two-time proportional outputs; one for heat zone above 50% output, and one for cool zone below 50% output.
- Current/Relay Duplex (Relay=Heat) - A variation of Duplex with Current active for 0 to 50% output (PID Set 2) and Relay 2 active 50 to 100% output (PID Set 1). Note that only one alarm is available for this output type.
- Relay/Current Duplex (Relay=Cool) - A variation of Duplex with Current active for 50 to 100% output and Relay 2 is active for 0 to 50% output. Note that only one alarm is available for this output type.

Control Algorithms - Depending on the output algorithms specified, the controller can be configured for the following control algorithms:

- On-Off
 - PID-A
 - PID-B
 - PD with Manual Reset
- 3 control modes: Manual, Automatic with Local Setpoint, Automatic with Remote Setpoint.

ALARMS

One or two electromechanical alarm relays are available to activate external equipment when preset alarm setpoints are reached. Each of the two alarms can be set to monitor two independent setpoints. Each alarm setpoint can be either high or low alarm. The alarm type can be selected to be either of the inputs, the Process Variable, Deviation, Output, Shed from communications, PV rate of change, or to alarm on manual mode activation or a Current Output Open failure. It can also be used as an On or Off event at the beginning or end of a Ramp/Soak segment. The alarm hysteresis is configurable from 0 to 100% of range.

- Alarms can be configured as latching or non-latching.
- Alarm blocking is also available which allows start-up without alarm energized until after it first reaches the operating region.
- PV rate of change alarm.
- Loop break alarm.
- Timer output reset.
- Diagnostic Alarm

COMMUNICATION

A communications link is provided between the UDC2800 and a host computer or PLC via the RS485 Modbus® RTU or Ethernet TCP/IP communications option. A Bluetooth communication link is also available allowing a non-intrusive configuration of the instrument.

MISCELLANEOUS FEATURES

*Auxiliary Output** - Either or both two current outputs can function as an Auxiliary Output which can be scaled from 0-20 mA or 4-20 mA for 0 to 100% for any range. It can be configured to represent Input 1, Input 2, PV, active Setpoint, Local SP1, Deviation, or the Control Output.

Transmitter Power - This output provides up to 28 volts DC to power a 2-wire transmitter (it requires the use of Open Collector Output (Transmitter Power Output) selection or the Auxiliary Output).

Four Local and one Remote Setpoints - Can be configured to provide Four Local and one Remote Setpoints, which are selectable either via the keyboard or by Digital Input.

Universal Switching Power - Operates on any line voltage from 90 to 264 Vac 50/60 Hz without jumpers. 24 Vac/dc instrument power is available as an option.

Timer - This standard feature provides a configurable time period of 0 to 99 hours, 59 minutes or units of minutes and seconds. It can be started via the keyboard, alarm 2, or by a digital input. The timer output is Alarm 1, which energizes at the end of the Timer Period. Alarm 1 can be automatically reset. The Timer Period can be changed between each batch. Status is shown on the lower display.

Moisture Protection - The NEMA4X and IP66 rated front face permits use in applications where it may be subjected to moisture, dust, or hose-down conditions.

Setpoint Ramp/Soak Programming (Optional) - Enables you to use 8 programs and store 4 Ramp and 4 Soak segments per program. Programs can be linked up to 64 segments. Run or Hold of program is keyboard or remote digital switch selectable.

Setpoint Rate - Lets you define a ramp rate to be applied to any local setpoint change. A separate upscale or downscale rate is configurable. A single setpoint ramp is also available as an alternative.

CE Mark - Conformity with Radio Equipment Directive 2014/53/EU as a standard feature.

Radio Compliance information -Federal Communications Commission (FCC) contains FCC ID: 2AVFQ-MCUDISP

Industry Canada (IC) contains IC: 25762-MCUDISP

Approval Body Options – CSA/UL listed certification are available as an option. CE/FCC/IC is standard.

Four Sets of Tuning Constants - Four sets of PID parameters can be configured for each loop and automatically or keyboard selected.

Data Security - Five levels of keyboard security protect tuning, configuration, and calibration data, accessed by a configurable 4-digit code. Nonvolatile EEPROM memory assures data integrity during loss of power.

Diagnostic/Failsafe Outputs - Continuous diagnostic routines detect failure modes, trigger a failsafe output value and identify the failure to minimize troubleshooting time.

High Noise Immunity - The controller is designed to provide reliable, error-free performance in industrial environments that often affect highly noise-sensitive digital equipment.

Accutune III™ - This standard feature provides a truly plug and play tuning algorithm, which will, at the touch of a button or through a digital input, accurately identify and tune any process including those with deadtime and integrating processes. This speeds up and simplifies start-up plus allows retuning at any setpoint. The algorithm used is an improved version of the Accutune III™ algorithm. Two possibilities are now offered when tuning your process: Fast Tune and Slow Tune.

Fast Tune will tune the process in such a way that the temp is reached faster, a slight overshoot will be allowed.

Slow Tune will minimize overshoot, but it will take more time for the process temperature to reach the target setpoint.

Heat/Cool (Duplex Tune) will automatically tune both the heating and cooling sides of the process.

Fuzzy Logic - This standard feature uses fuzzy logic to suppress process variable overshoot due to SP changes or externally induced process disturbances. It operates independently from Accutune III™ tuning. 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 smooth PV response. It can be enabled or disabled depending on the application or the control criteria.

OPERATOR INTERFACE

Indicators—Provide alarm, control mode, and temperature unit indication. There is also indication of when Remote Setpoint is active, the status of the control relays, and whether a setpoint program is in Run or Hold mode.

Displays— TFT screen is adopted for better display. During normal operation, the upper and middle display is dedicated to the process variable and setpoint variable and special annunciator features. During configuration, the upper, middle and lower display provides guidance for the operator through prompts.

During normal operation the lower display shows key-selected operating parameters such as Output, Setpoints, Inputs, Deviation, active Tuning Parameter Set, Timer Status, or minutes remaining in a setpoint ramp. During configuration, the lower display provides guidance for the operator through prompts. Diagnostic messages are displayed independently. Bar chart of PV, SP, OUT displayed on screen.

You decide how the controller is to interact with the process by selecting, through simple keystrokes, the functions you want.

English prompts guide the operator step-by-step through the configuration process assuring quick and accurate entry of all configurable parameters.

Decimal Point Location—Configurable for none, one, two or three places.

Dedicated Keys—Provide direct access setpoint modes and setpoint program status to simplify and speed operation.

Universal Outputs – UDC2800 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 hardware configuration required.

PHYSICAL DESCRIPTION

The controller is housed in a 4.5-inch (114 mm) deep, black plastic case with a dark gray elastomer bezel, that is panel mounted in a 1/4 DIN cutout. (See [Dimensions](#) Section) The plug-in chassis allows easy access to the controller board and its various option boards. All power, input, and output wiring are connected to screw terminals on the rear panel. (See [Wiring](#) Section.)

OPERATOR INTERFACE



DISPLAY INDICATORS	
	Upper display shows Process Variable value (maximum 10 digits including decimal point, eg. -XXXXXXXXX.X), its unit can be F, C, or none
	Middle display shows working Setpoint and its value (maximum 10 digits including decimal point, eg. -XXXXXXXXX.X)
	Lower display shows key-selected operating parameters such as Output, Set points, Inputs, Deviation, active Tuning Parameter Set, Timer Status, or minutes remaining in a setpoint ramp.
	Diagnostics display shows diagnostic messages.

	Indicate control mode is Auto or Manual.		Alarm 1 and/or Alarm 2 annunciation.
	Digital Input 1 and/or 2 annunciations		Control Relay 1 and/or 2 annunciation.
	Modbus, or Ethernet communication status annunciation		Bluetooth communication status annunciation.

KEYS AND FUNCTIONS					
	Scrolls through the configuration groups.		Selects functions within each configuration group. Hold key down to cycle through configured setpoints.		
	Increases setpoint or output value. Increases the configuration values or changes functions in Configuration mode groups.		Decreases setpoint or output value. Decreases the configuration values or changes functions in Configuration mode groups.		
	Returns Controller to normal display from Set Up mode. Toggles various operating parameters for display.		M-A/Reset Key Select Manual or Auto mode.		
		Enables Run/Hold of the SP Ramp or Program plus Timer start. Push Setup key then click Increment key.			Push Increment key then click Decrement key to speed up value input, or vice versa
	Bluetooth transceiver		NEMA4X and IP66 screw attachment (each corner)		

EASYSET MOBILE DEVICE APP

Features:

- Create configurations with mobile application running on a Mobile device.
- Create/edit configurations live. Just connect software to the controller.
- Create/edit configurations offline and download to controller later.
- Communication types available on every UDC2800:
 - Bluetooth (Standard / Easyset App)
 - RS-485 (Optional / Software)
 - Ethernet (Optional / Software)
- Same port types on UDC2800 allow interconnectivity.
- Import configurations from legacy devices using PIE tool.
- Supports Firmware upgrade.
- This software is available in English.



Easyset App Dashboard

Bluetooth Communications

The Bluetooth connection provides a non-intrusive wireless connection with the instrument and maintains NEMA4X and IP66 integrity.

No need to get access to the back of the controller to communicate with the instrument, no need to take your screwdriver to wire the communication cable, no wiring mistake possible! You can now duplicate an instrument's configuration, upload or download a new configuration in a matter of seconds, just by connecting your mobile device to instrument through Bluetooth.

Connect & Upload! It takes less than 2 seconds to upload a configuration from an instrument! You can then save the configuration file onto your mobile device for review, modification or archiving.

Furthermore, the software and app also give you important maintenance information on the controller: instantly, get information on the current operating parameters, digital inputs and alarm status, identify internal or analog input problems.

Question: What if I have several controllers on the same panel? How can I be sure I am communicating with the correct one?

Answer: The Bluetooth is normally "off". You activate the Bluetooth on a particular controller by pressing any key. Once activated, can now pair with the controller. If a controller has been connected, then the Bluetooth status mark will show on the screen. Each controller also has a different Bluetooth ID.

MODEL NUMBER INTERPRETATION

Instructions

- Select the desired key number. The arrow to the right marks the selection available.
- Make the desired selections from Tables I through VI using the column below the proper arrow. A dot (•) denotes availability.

Key Number I II III IV V VI

_____ - _____ - _____ - _____ - _____ - _____



KEY NUMBER

Key Number	Description
I	Digital Controller for use with 100 to 240Vac Power
II	Digital Controller for use with 24Vac/dc Power

Selection Availability

DC2800	↓	↓
DC2900		

TABLE I - Specify Control Output and/or Alarms

Output #1	Description
	Current Output (4 to 20ma, 0 to 20 ma)
	Electro Mechanical Relay (5 Amp Form C)
	Open Collector transistor output
	Dual 2 Amp Relays (Both are Form A) (Heat/Cool Applications)
Output #2 and Alarm #1 or Alarms 1 and 2	Description
	No Additional Outputs or Alarms
	One Alarm Relay Only
	E-M Relay (5 Amp Form C) Plus Alarm 1 (5 Amp Form C Relay)
	Open Collector Plus Alarm 1 (5 Amp Form C Relay)

C_	*	*
E_	*	*
T_	*	*
R_	*	*
_0	*	*
_B	*	*
_E	*	*
_T	*	*

TABLE II - Communications and Software

Communications	Description
	None
	Auxiliary Output/Digital Inputs (1 Aux and 1 DI or 2 DI)
	RS-485 Modbus Plus Auxiliary Output/Digital Inputs
	10/100M Base-T Ethernet (Modbus RTU) Plus Auxiliary Output/Digital Inputs
Software	Description
	Limit Controller
	Standard Software
	Standard S/W and Set Point Programming
Future Options	Description
	None

0_	*	*
1_	*	*
2_	*	*
3_	*	*
_L	e	e
_S	*	*
_F	*	*
_0	*	*

TABLE III - Input 1 and Input 2

Input 1 (Note 1)	Description
	TC, RTD, mV, 0-5V, 1-5V, 0-10V
	TC, RTD, mV, 0-5V, 1-5V, 0-10V, 0-20mA, 4-20mA
Input 2	Description
	None
	TC, RTD, mV, 0-5V, 1-5V, 0-10V
	TC, RTD, mV, 0-5V, 1-5V, 0-10V, 0-20mA, 4-20mA
	Slidewire Input for Position Proportional (Requires 2 Relay Outputs)
	Carbon, Oxygen or Dewpoint (Provides 2 Inputs)

1_	*	*
2_	*	*
_00	*	*
_10	*	*
_20	*	*
_40	a	a
_60	b	b

Note 1: Input 1 can be changed in the field using external resistors.

TABLE IV - Options

Approvals	Description
	CE (Standard)
	CE, UL, and CSA
	CE, UL, CSA, FM (Limit control)
Tags	Description
	None
	Stainless Steel Customer ID Tag - 3 lines w/22 characters/line
Future Options	Description
	None

Selection	↓	↓
0_	*	*
1_	*	*
2_	d	d
_0	*	*
_T	*	*
_0	*	*

TABLE V - Documentation

Documents	Description
	Quick Start Guide - English
Certificate	Description
	None
	Certificate of Conformance (F3391)

0	*	*
_0	*	*
_C	*	*

TABLE VI - Extended Warranty

Extended Warranty	Description
	None
	Extended Warranty Additional 1 year
	Extended Warranty Additional 2 years

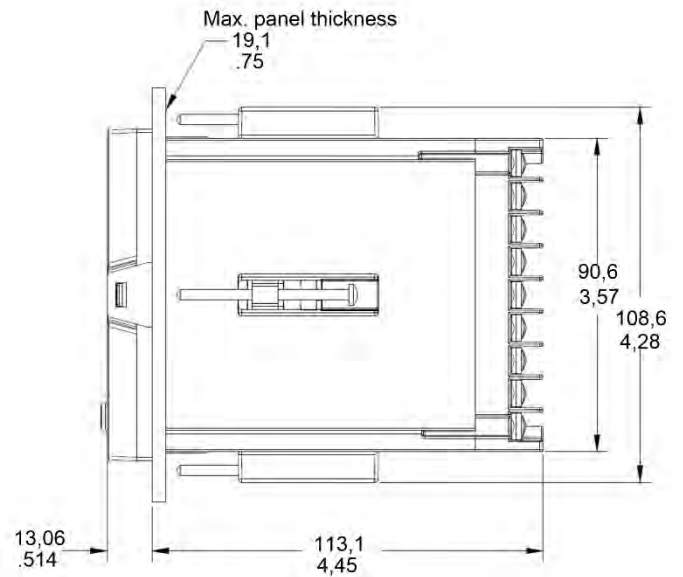
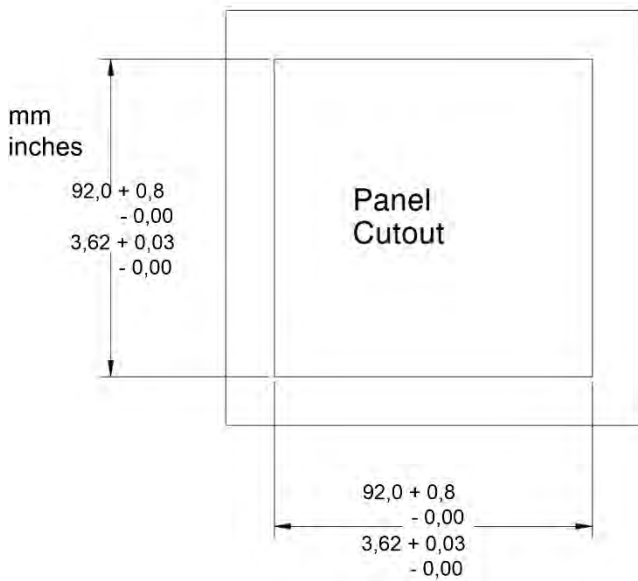
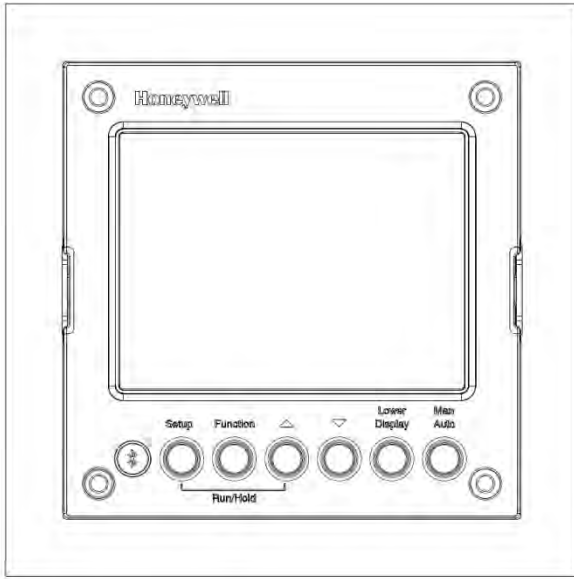
0	*	*
1	*	*
2	*	*

RESTRICTIONS

Restriction Letters	Available Only With		Not Available With	
	Table	Selection	Table	Selection
a	I	EE, R_		
b	III	1_		
c	II	_S		
d	II	_L		
e	III	_00	I	C_ R_

DIMENSIONS

The controller is housed in a 4.5-inch (114 mm) deep, black plastic case with a dark gray elastomer bezel that can be panel mounted in a 1/4 DIN cutout. The plug-in chassis allows easy access to the controller board and its various option boards. All power, input, and output wiring are connected to screw terminals on the rear panel.



UDC2800 Controller and Cutout Dimensions

UDC2800 Technical Specifications

Modbus® is a trademark of AEG Modicon.

All other products and brand names shown are trademarks of their respective owners.

This document contains Honeywell proprietary information. It is published for the sole usage of Honeywell Process Solutions' customers and prospective customers worldwide. Information contained herein is to be used solely for the purpose submitted, and no part of this document or its contents shall be reproduced, published, or disclosed to a third party without the express permission of Honeywell International Inc.

While this information is presented in good faith and believed to be accurate, Honeywell disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties except as may be stated in its written agreement with and for its customer.

In no event is Honeywell liable to anyone for any indirect, special or consequential damages. The information and specifications in this document are subject to change without notice.

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курган (3522)50-90-47
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Ноябрьск (3496)41-32-12

Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35

Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

сайт: www.honeywell.nt-rt.ru || эл. почта: hwn@nt-rt.ru