

## Technical Information

### PrecisionLine Controllers EDC201 / EDC202 / EDC203 EASySET DIGITAL CONTROLLERS Specification 51-52-03-48, July 2015



#### Introduction

The EDC201, EDC202 and EDC203 controllers provide precise temperature control, and are available in standard 1/16 DIN, 1/8 DIN and 1/4 DIN panel size formats. Vivid and large 4-digit displays and keypad buttons enable intuitive product use and configuration.

The controllers are fully dedicated to monitor and control temperatures in a wide range of applications such as environmental chambers, furnaces, ovens, dryers, packaging machines in plastics and the food and beverage industries.



#### Features

##### Vivid Display

Large 4-digit displays provide clear and bright viewing of PV, SP, adjustable decimal position, °C or °F and configuration parameters. Additional indicators identify status of control outputs, alarm outputs, A/M mode selection, Autotuning status. Configuration parameters are divided into 7 groups, which are identified by 7 LEDs at the top of the display indicating each group name. During parameter configuration, the related group name LED is visible.

##### Easier to Configure

Two different configuration levels (Configuration mode and Normal operating mode) provide quick and easy access to parameters. A 4-digit security code prevents unauthorized changes. Selected parameters can also be hidden from the User to prevent mis-configuration.

##### Moisture Resistant Front

Meets NEMA 3R / IP54 front-face protection against dust and water.

##### Input Types

A single analog input supports eight different types of thermocouples and a RTD PT100 type input.

##### Universal Power Supply

The controllers can operate on any line voltage from 90 Vac to 264 Vac at 50/60 Hz. A 19.2 Vdc to 28.8 Vdc power supply model is available as an option.

##### Control Algorithms

Three control algorithms are available for specific application needs: ON/OFF Control, Time Proportional Control (PIDA or PIDB), Three Position Step Control. Alarm 1 output is set as the second control output when Three Position Step Control is used.

##### Alarm Capability

Two Alarm outputs are available for the EDC202 and EDC203 models. A single alarm output is available for EDC201. There are 10 configurable alarm modes for each alarm output.

##### Digital Input

One digital input is provided for remote dry contact closure to select one of the following actions:

- Direct controller action
- Disable keyboard
- Start Timer
- Auto/Manual mode switch
- Start/Stop Autotuning
- Alarm Acknowledge

##### Manual/Automatic Modes

In the Manual mode of operation, the operator directly controls the controller output level. In Auto mode, the control algorithm will generate the final control output automatically.

##### Autotune

Automatically determines the optimum PID parameters, which are then used with Accutune III algorithms to achieve a rapid process temperature rise or fall to the desired Set Point value with minimum overshoot and variation – precision in maintained control. Autotune is initiated on-demand, typically at initial process start-up.

##### Thermocouple Health

Diagnostic for identifying thermocouple input status condition.

##### Timer

Internal timer provides a configurable time-out period from 0 to 9 hours and 59 minutes. The Timer can be started by actuation of a button, use of a configured Digital Input, or by the output of Alarm2 for EDC202 and EDC203 models. The alarm output activates once the Timer times out. The time-out state can be reset with actuation of a button on the front panel.

## Performance Specifications

Specification Table		
<b>Control</b>	Relay Output	Dry contact / N.O. 5 amps @ 30 VDC or 250 VAC
	SSR Driver Output	24VDC/20mA
	Algorithm	ON-OFF
		Time Proportional Three Position Step <i>(mutually exclusive with Alarm 1)</i>
<b>Alarm</b>	Output	Dry contact / N.O. 3 amps @ 30 VDC or 250 VAC
	Mode	PV
		Deviation
		PV Rate of Change
		Control Output
		Digital Input
		Operation Mode
		Thermocouple Warning
		Thermocouple Fail
		Failsafe
System Diagnostic		
<b>Digital Input</b>	ON Sense Voltage	13 VDC
	OFF Sense Voltage	5 VDC
<b>Display</b>	PV/SP Indication	4-digit, 7 segment display
<b>Analog Inputs (One)</b> <i>(See Table 1 for Input Actuations)</i>	<i>Accuracy:</i> $\pm 0.5\%$ of full scale typical ( $\pm 1$ digit for display) <i>Sampling Rate:</i> 250 msec (TC), 350 msec (RTD) <i>Temperature Stability:</i> $\pm 0.01\%$ of Full Scale span / °C change typical <i>Input Impedance:</i> 10 megohms <i>Maximum Lead Wire Resistance:</i> Thermocouples: 50 ohms/leg 100 ohm, 200 ohm and 500 ohm RTD: 100 ohms/leg 100 ohm Low RTD: 10 ohms/leg	
<b>Analog Input Signal Failure Operation</b>	<i>Burnout Selections:</i> Upscale, Downscale, Failsafe or None <i>Thermocouple Health:</i> Good, Failing, Failure Imminent or Failed <i>Failsafe Output Level:</i> Configurable 0-100% of Output range	
<b>Indicators</b>	Alarm Relay Status	ALM 1 or 2
	Control Mode	Auto or Manual
	Temperature Units	F or C
	Control Relay Status	Output
	Auto Tune Status	Running State
	Menu	7 LED indicators
<b>Approvals</b>	CE	EMC: EN 61326-1 2006 Low Voltage Directive: EN 61010-1 2010 <i>(Both are "Self Declared")</i>
	UL	ANSI/UL 61010-1 Third Edition
	CSA	CAN/CSA-C22.2 No. 61010-1-12 Third Edition

## Input Actuations

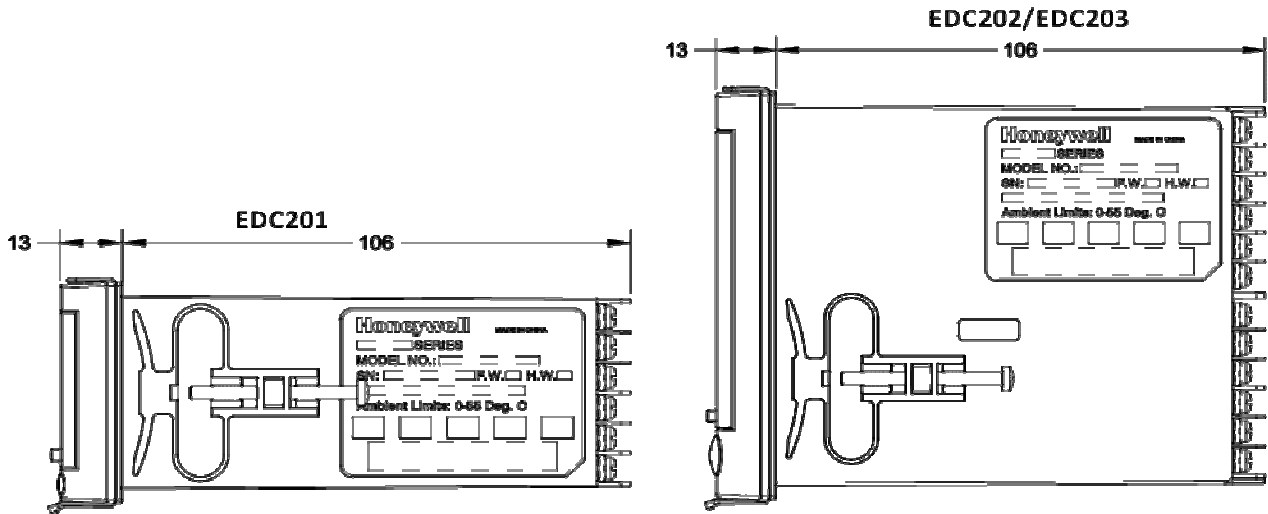
TC/RTD Type and Range				
	Sensor Type	Range (°C)		
TC	E Thermocouple High	-270 to 1,000	-9.835 mV	76.373 mV
	J Thermocouple High	-18 to 871	-0.886 mV	50.060 mV
	K Thermocouple High	-18 to 1316	-0.692 mV	52.952 mV
	Ni-Ni-Moly Thermocouple High	0 to 1371	0.000 mV	71.773 mV
	Platinel II Thermocouple High	0 to 1380	0.000 mV	54.798 mV
	R Thermocouple	-18 to 1704	-0.090 mV	20.281 mV
	S Thermocouple	-18 to 1704	-0.092 mV	17.998 mV
	T thermocouple High	-184 to 371	-5.341 mV	19.097 mV
RTD	PT100(Low)	-184 to 149		
	PT100	-184 to 649		

Environmental Characteristics				
Consideration	Reference	Rated	Operating Limits	Transportation and Storage Limits
Ambient Temp Range	25 ± 3 °C	15 to +55°C	0 to +55°C	-40 to +66°C
	77 ± 5 °F	58 to 131°F	32 to 131°F	-40 to 151°F
Relative Humidity	10 to 55% (non condensing) (*)	5 to 90% (non condensing) (*)	5 to 90% (non condensing) (*)	5 to 95%, (non condensing) (*)
Corrosives	G2 Standard - See ISA Standard S71.04 for Corrosive Environment Classification			
Front Protection	IP54 NEMA3R	IP54 NEMA3R	IP54 NEMA3R	IP54 NEMA3R
Vibration				
	Frequency (Hz)	0	0 to 200	0 to 200
Acceleration (g)	0	0.6	0.6	0.5
Mechanical Shock				
	Acceleration (g)	0	5	5
Duration (ms))	0	30	30	30

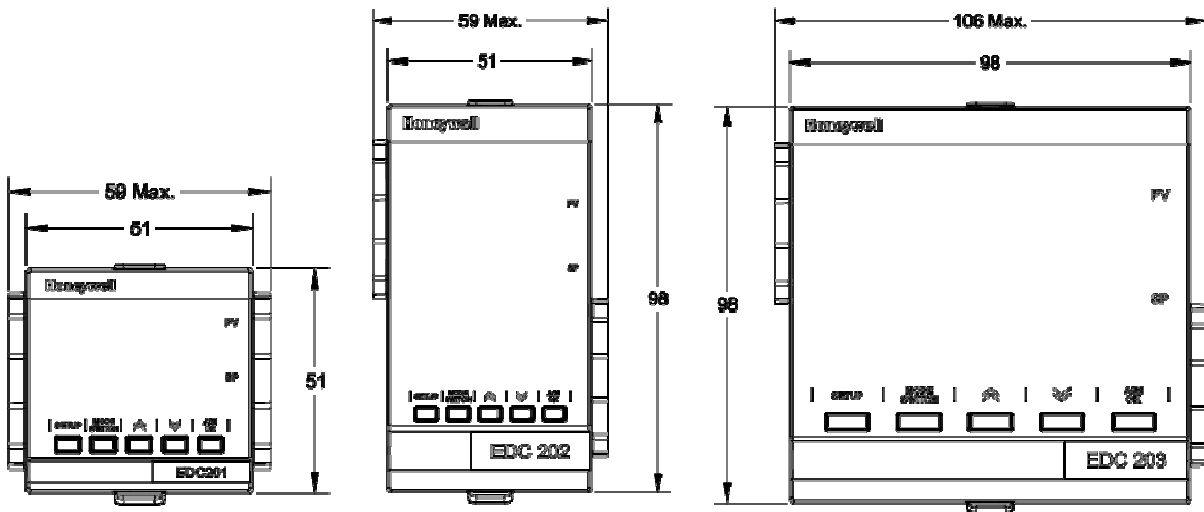
Notes: (\*) The maximum relative humidity spec applies up to 40°C. Above 40°C the RH spec is de-rated to maintain constant moisture content.

**Dimensions and Panel Cutout**

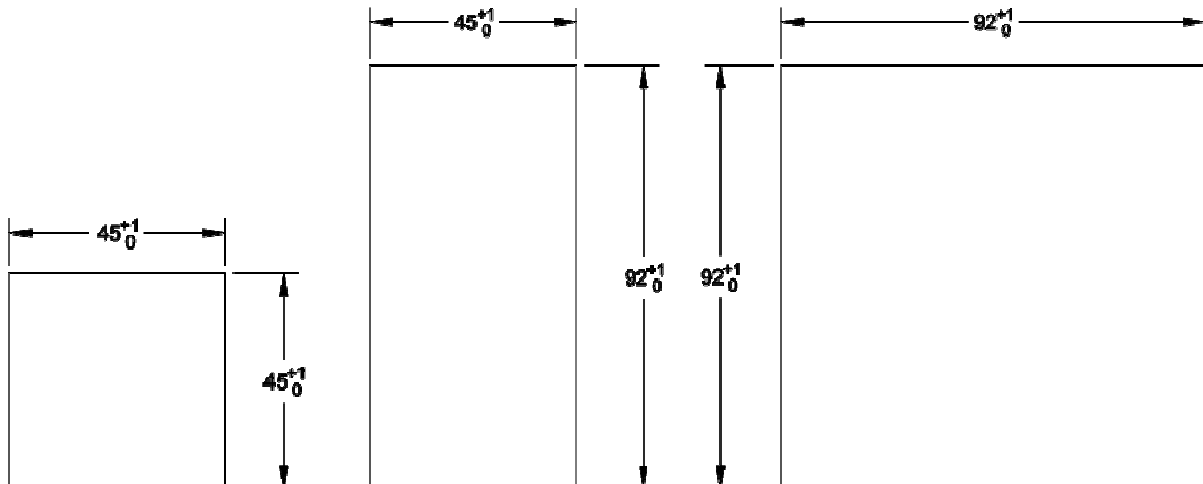
**Depth**



**Front Panel Size**



**Panel Cutout**



## Faceplate

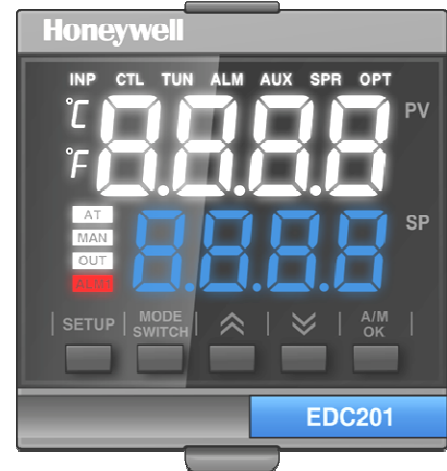
**Navigation Bar:** Setup group name displayed during configuration.

**Upper display:** 4 digits dedicated to display the Process Variable (PV). In configuration mode, this display indicates the name of the parameter.

**Lower display:** 4 digits dedicated to display the Set Point (SP). In configuration mode, this display indicates the value of the parameter selected.

### LEDs:

AT MAN	Auto tuning running when ON. Manual control mode when ON. Auto control mode when OFF.
OUT ALM1	Control output energized when ON. ON when the pre-defined alarm activates.
(EDC202, 203): A/M	Auto control mode when "A" is ON. Manual control mode when "M" is ON.
ALM2	ON when the pre-defined alarm activates.



### Keys:

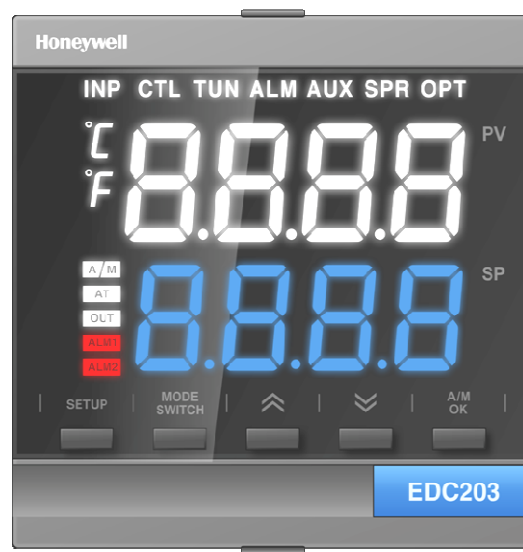
**SETUP:** In Normal Operating Mode, long press enters into Configuration Mode. In Configuration Mode, long press returns to Normal Operating Mode, a short press cycles through the menu items.

**Mode/Switch:** In Normal Operating Mode, short press switches the lower display parameters or enables some functions. In Configuration Mode, short press to cycle through parameters in a set up group.

**Down:** Decrease value of a selected parameter or switch back to the previous item.

**Up:** Increase value of the selected parameter or switch to the next item.

**MAN/OK:** In Normal Operating Mode, enables switch of control mode when the value of "SP" or "OUT" is shown on the lower display; Acknowledge alarm or initiate functions when the information shown on the lower display is other than the value of "SP" or "OUT". In Configuration Mode, acknowledge actions.



**Display and Operation**



Area	Display/Button	Normal Operating Mode	Parameter Configuration Mode
1	Menu Navigation	Not display	Current parameter group
2	Temp Unit	Display the unit of current temperature in use	
3	Status Display	Indicate the status of Alarm, control output, control mode and Auto-tuning	
4	Lower Display	Display the value of SP, output and the information of Timer, alarm and auto-tuning	Display the current option or value of the parameter
5	Upper Display	Display the value of process variable	Display the parameter selected
A	SETUP	Press and hold for 3s - Enter into Parameter Configuration Mode	Short press - Switch the Parameter group Press and Hold - Cycle through Parameter Groups
B	MODE SWITCH	Short press - Switch lower display	Short press - Switch parameter; Press and Hold - Cycle through parameters
C	⏶	Increase the value or change the options of selected parameter	
D	⏷	Decrease the value or change the options of selected parameter	
E	A/M OK	Switch control mode when the value of "SP" or "Out" is shown on the lower display; Acknowledge alarm or initiate functions when the information shown on the lower display is other than the value of "SP" or "Out" .	Acknowledge actions

# EDC200 Temperature Controller

Model Selection Guide  
51-51-16-102 Issue 0.6

**Special Features**

- **Easysset Digital Controller**
- **Available in three (3) sizes: 1/16 DIN, 1/8 DIN, 1/4 DIN**
- **Analog input (AI) for thermocouples and RTDs**
- **Digital input (DI) and alarm relay outputs**
- **PID control with Honeywell Accutune (single button process tuning)**

**Instructions**

- Select the desired Key Number. The arrow to the right marks the selections available.
- Make one selection each from Tables I through III using the column below the proper arrow. A dot (•) denotes unrestricted availability. A letter denotes restricted availability.

**Key Numbers**

EDC20\_ - 

I
---

 - 

II
----

**KEY NUMBER**

Description		Selection	Availability		
Size	48 x 48 mm (1/16 DIN), AI, DI, 1 alarm relay output	EDC201	↓		
	48 x 96 mm (1/8 DIN), AI, DI, 2 alarm relay outputs	EDC202		↓	
	96 x 96 (1/4 DIN), AI, DI, 2 alarm relay outputs	EDC203			↓

**TABLE I**

Power	90-264 Vac Power	0 __	•	•	•
	19-28 VDC Power	1 __	•	•	•
Control Output	Relay, Dry Contact / N.O., 5A @ 30 Vdc or 250 Vac	_ 0 _	•	•	•
	SSR Drive, 24 VDC @ 20 mA	_ 1 _	•	•	•
Future	None	__ 0	•	•	•

**TABLE II**

Future	None	0 _	•	•	•
Future	None	_ 0	•	•	•

## Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

### ASIA PACIFIC

Honeywell Process Solutions,  
(TAC) [hfs-tac-support@honeywell.com](mailto:hfs-tac-support@honeywell.com)

#### Australia

Honeywell Limited  
Phone: +(61) 7-3846 1255  
FAX: +(61) 7-3840 6481  
Toll Free 1300-36-39-36  
Toll Free Fax:  
1300-36-04-70

#### China – PRC - Shanghai

Honeywell China Inc.  
Phone: (86-21) 5257-4568  
Fax: (86-21) 6237-2826

#### Singapore

Honeywell Pte Ltd.  
Phone: +(65) 6580 3278  
Fax: +(65) 6445-3033

#### South Korea

Honeywell Korea Co Ltd  
Phone: +(822) 799 6114  
Fax: +(822) 792 9015

### EMEA

Honeywell Process Solutions,  
Phone: + 80012026455 or  
+44 (0)1202645583

Email: (Sales)

[FP-Sales-Apps@Honeywell.com](mailto:FP-Sales-Apps@Honeywell.com)

or

(TAC)

[hfs-tac-support@honeywell.com](mailto:hfs-tac-support@honeywell.com)

### AMERICA'S

Honeywell Process Solutions,  
Phone: (TAC) 1-800-423-9883 or  
215/641-3610  
(Sales) 1-800-343-0228

Email: (Sales)

[FP-Sales-Apps@Honeywell.com](mailto:FP-Sales-Apps@Honeywell.com)

or

(TAC)

[hfs-tac-support@honeywell.com](mailto:hfs-tac-support@honeywell.com)

*Specifications are subject to change without notice.*

## For more information

To learn more about Controllers, visit  
[www.honeywellprocess/controllers.com](http://www.honeywellprocess/controllers.com)  
Or contact your Honeywell Account Manager

## Process Solutions

Honeywell

1250 W Sam Houston Pkwy S  
Houston, TX 77042

Honeywell Control Systems Ltd  
Honeywell House, Skimped Hill Lane  
Bracknell, England, RG12 1EB

Shanghai City Centre, 100 Jungi Road  
Shanghai, China 20061

[www.honeywellprocess.com](http://www.honeywellprocess.com)



51-52-03-48

July 2015

©2015 Honeywell International Inc.