EasySet Temperature Controllers
EDC201 / EDC202 / EDC203 – Customer Presentation
Honeywell
EasySet Temperature Controllers

- Ease of Setup/Use
- Vivid Display
- Control Precision

- 96 x 96 mm 1/4 DIN
- 48 x 96 mm 1/8 DIN
- 48 x 48 mm 1/16 DIN
EasySet  Temperature Controllers

Industries

- Metals
- Glass
- Food & Beverage
- Ceramics
- Pharmaceuticals
- Power Generation
- Automotive
- Plastics
- Biotechnology
- Water & Waste
- Aerospace
- Painting/Coating
- Semiconductors

Applications

- Furnaces
- Ovens
- Boilers
- Environmental Chambers
- Kilns
- Dryers
- Packaging Machines
- Extruders
Precise Control using Honeywell field proven process control algorithms.

Easy Operation with one-touch auto tuning, bright and vivid displays, keypad for easy access to change setpoints, modes of operation, acknowledge Alarms and modify device configuration parameters.

Reduced Operational Costs with quick access to information for status diagnostics, device data access and configuration changes.
Ease of Setup and Use

**Navigation Bar**
During Configuration Mode each Setup group name is displayed.

**User Keys**
Five operator interface keys for configuration and operator access.

**Configuration**
Controller provides **two configuration levels**; Operator and Configurator. A **4-digit security code** prevents unauthorized changes. Select **parameters may also be hidden** to prevent inadvertent changes.
Control Precision

- Auto Tuning for automatic identification and setting of tuning parameters
- Controlled recovery to set point after process disturbances, and precise temperature control to desired set point
EasySet  Temperature Controllers

Vivid Display

- Large, bright displays
- Upper display for Process Variable and selected parameter during configuration
- Lower display for Set Point, Output, Auto Tune and parameter value during configuration

LED indicators identifying Auto Tune active, MAN/AUTO control mode, Output status and Alarm status
Capabilities

- Single Analog input supports thermocouples (E, J, K, R, S, T, PI I, Ni-Ni-Moly) or RTD (PT100 low and PT100)

- Single Digital input (Sense voltages: ON–13 VDC, OFF–5 VDC)

- Single Control output supporting relay (5 Amp) or SSR (24 VDC) driver

- Single Alarm relay (5 Amp) output for EDC201, two Alarm relays for EDC202 and EDC203
Accutune (*Auto Tuning*) - “one time event” automatically identifying ideal PID tuning constants for the process at its operating Set Point

Control Modes - ON/OFF, Time Proportional (*based on PID A or PID B*), Motor Control Three Position Step (*TPSC*)
Three Position Step Control (TPSC)

- Controls a valve or other actuator with an electric motor that is driven by two controller relay outputs;
  - Control Output - drives motor upscale (or downscale)
  - Alarm 1 Output - drives motor downscale (or upscale)

- Control is performed without a feedback slidewire that is linked to the motor shaft.

- The output display, which is an estimated motor position, is corrected each time the controller drives the motor to one of its stops (0% or 100%).

- Motor Time and Deadband need to be configured for the TPSC algorithm. Motor time is the time it takes the motor to travel from 0% to 100%. Deadband is an adjustable gap between the outputs, where neither output operates (0.5% to 5%).
### Thermocouple Failure Warning

- **TC Reference Junction**
- **TC Connecting Head**
- **TC Extension Wire**
- **Alarm Relay Output**

#### Alarm Output for TC Warning or Failure

- **TC Warning** - diagnostic that the thermocouple is starting to burnout or resistance of wires connecting TC to the controller is above 100 ohms
- **TC Failure** - diagnostic that the thermocouple will soon fail or resistance of wires connecting TC to the controller is above 180 ohms

### Input Burnout and Control Output Failsafe

- **Sensor Break**

#### Input Burnout Configuration on Input Failure

- **UP** - input to full scale value
- **DOWN** - input to lower range value
- **Failsafe** - configured failsafe output value applied on input failure
- **NoFailsafe** - configured failsafe output value not applied, input at last valid value
### Alarm Capabilities

**Alarm Outputs For Various Process Events**

**TYPE** - Alarms can be set for out of range PV, SP, OUT, PV rate, MANUAL mode, Digital input, TC warning, TC failing, FAILSAFE and system diagnostic

**TRIGGER** - Alarms can trigger as HIGH or LOW

**LATCH SEL** - Alarm output can be configured as latched or non-latched

---

### Configuration Parameter Security

**Avoid Inadvertent Configuration Changes**

- **CONFIG LEVEL** - Configurator or Operator levels can be set for parameter access
- **PASSWORD** - 4 digit code value can be set for Configurator and Operator level
- **MASK** - A mask code can be assigned for individual parameters to be hidden (00), configurable only at Configurator level (10), displayed and configurable by both Operator and Configurator levels (11)
Soft Start Output Power Limit

Limiting Control Output at Power-Up
- **Soft Start** - function can be enabled to limit the output applied to the heater when mode switched from MAN to AUTO
- **Output Limit** - output "hold value"
- **Set Point** - set point threshold at which point the "output hold" value is released, when the PV reaches this value
- **Period** - configurable timeout period for ending the Soft Start function (0 to 99:59 min.)

Digital Input for Remote Control

External Switch Remote Control Functions
- **A/M Mode** - switch control operating mode Auto or Manual
- **Lock** - contact closure disables all controller keys
- **Accutune** - start the controller Auto Tuning process
- **Timer** - internal Timer started
- **Direction** - controller will change current output action direction to the opposite direction
- **Alarm Acknowledge** - controller acknowledges the currently active Alarm
EasySet  Temperature Controllers

Additional Functional Features

- **Input Compensation** - Ratio, Bias and Filter settings

- **Control Output** - Cycle time, Output direction *(direct/reverse)*, Minimum ON time, Relay State *(energized/de-energized)*, Hysteresis *(for ON/OFF)*, Deadband *(for TPSC)*, Fail mode *(AUTO/MAN mode and failsafe)*

- **Timer Function** - Internal timer configurable from 0:00 min to 09:59 hrs

- **General Settings** - Power frequency of controller *(50Hz or 60Hz)*, decimal setting, temperature units *(°F or °C)*

- **Status** - Controller error codes, firmware/hardware versions, display test, reset configuration to factory defaults
Input Type = K thermocouple
Control Algorithm = ON/OFF
Alarm 1, Set Point 1 = not active
Aux Group, Digital Input = not active
Option Group, Frequency = 60Hz
PV (white), SP (blue), MAN mode, Control output enabled
## EasySet Temperature Controllers

### Specification Table

<table>
<thead>
<tr>
<th>Control</th>
<th>Relay Output</th>
<th>Dry contact / N.O. 5 amas @ 30 VDC or 250 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR Driver Output</td>
<td>24VDC/20mA</td>
<td></td>
</tr>
<tr>
<td>Algorithm</td>
<td>Time Proportional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Three Position Step (mutually exclusive with Alarm 1)</td>
<td></td>
</tr>
<tr>
<td>Alarm</td>
<td>Dry contact / N.O. 3 amas @ 30 VDC or 250 VAC</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>PV Deviation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV Rate of Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control Output</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital Input</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation Mode</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temperature Warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thermocouple Fail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FailSafe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>System Diagnostic</td>
<td></td>
</tr>
<tr>
<td>Digital Input</td>
<td>ON Sense Voltage 13 VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OFF Sense Voltage 5 VDC</td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>PV/SP Indication 4-digit, 7 segment display</td>
<td></td>
</tr>
</tbody>
</table>

### TC/RTD Type and Range

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Range (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC</td>
<td>-270 to 1,000</td>
</tr>
<tr>
<td>J Thermocouple High</td>
<td>-18 to 871</td>
</tr>
<tr>
<td>K Thermocouple High</td>
<td>-18 to 1361</td>
</tr>
<tr>
<td>Ni-Ni-Moly Thermocouple High</td>
<td>0 to 1371</td>
</tr>
<tr>
<td>Platinum II Thermocouple High</td>
<td>0 to 1380</td>
</tr>
<tr>
<td>R Thermocouple High</td>
<td>-18 to 1704</td>
</tr>
<tr>
<td>S Thermocouple</td>
<td>-18 to 1704</td>
</tr>
<tr>
<td>T Thermocouple</td>
<td>-184 to 371</td>
</tr>
<tr>
<td>RTD PT100 (Low)</td>
<td>-184 to 149</td>
</tr>
<tr>
<td>PT100</td>
<td>-184 to 649</td>
</tr>
</tbody>
</table>

### Environmental Characteristics

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Reference</th>
<th>Rated</th>
<th>Operating Limits</th>
<th>Transportation and Storage Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temperature</td>
<td>25 ± 3 °C</td>
<td>15 to 65 °C</td>
<td>0 to 65 °C</td>
<td>-40 to +66 °C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>10 to 55% (non condensing)</td>
<td>5 to 90% (non condensing)</td>
<td>5 to 90% (non condensing)</td>
<td>5 to 95%, (non condensing)</td>
</tr>
<tr>
<td>Corrosives</td>
<td>G2 Standard - See ISA Standard S71.94 for Corrosive Environment Classification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Protection</td>
<td>IP54 NEMA3R</td>
<td>IP54 NEMA3R</td>
<td>IP54 NEMA3R</td>
<td>IP54 NEMA3R</td>
</tr>
<tr>
<td>Vibration</td>
<td>0 to 200 Hz</td>
<td>0 to 200</td>
<td>0 to 200</td>
<td>0 to 200</td>
</tr>
<tr>
<td>Acceleration (g)</td>
<td>0 to 0.6</td>
<td>0 to 0.5</td>
<td>0 to 0.5</td>
<td>0 to 0.5</td>
</tr>
<tr>
<td>Mechanical Shock</td>
<td>0 to 5</td>
<td>0 to 5</td>
<td>0 to 5</td>
<td>0 to 5</td>
</tr>
</tbody>
</table>

Notes: (*) The maximum relative humidity spec applies up to 40 °C. Above 40 °C the RH spec is derated to maintain constant moisture content.
EasySet Temperature Controllers

Model Selection Guide

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.

<table>
<thead>
<tr>
<th>Key Numbers</th>
<th>Selection</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC20_</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY NUMBER</th>
<th>Description</th>
<th>Selection</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48 x 48 mm (1/16 DIN), AI, DI, 1 alarm relay output</td>
<td>EDC201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>48 x 96 mm (1/8 DIN), AI, DI, 2 alarm relay outputs</td>
<td>EDC202</td>
<td></td>
</tr>
<tr>
<td></td>
<td>96 x 96 mm (1/4 DIN), AI, DI, 2 alarm relay outputs</td>
<td>EDC203</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>Description</th>
<th>Selection</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>90-264 Vac Power</td>
<td><em>0</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19-28 VDC Power</td>
<td><em>1</em></td>
<td></td>
</tr>
<tr>
<td>Control Output</td>
<td>Relay, Dry Contact / N.O., 5A @ 30 Vdc or 250 Vac</td>
<td><em>0</em></td>
<td></td>
</tr>
<tr>
<td>Future</td>
<td>None</td>
<td><em>1</em></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE II</th>
<th>Description</th>
<th>Selection</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future</td>
<td>None</td>
<td><em>0</em></td>
<td></td>
</tr>
<tr>
<td>Future</td>
<td>None</td>
<td><em>0</em></td>
<td></td>
</tr>
</tbody>
</table>
EasySet Temperature Controllers

- Precise Control
- Auto Tuning
- Ease of Setup and Use
- Large and Bright Displays
- Configuration Security and Alarms
- Thermocouple and Device Diagnostics

Delivering Excellent Temperature Control and Operational Savings