• Digital accuracy
• LCD provides real time operating temperatures at up to three locations
• Animated representation of system operation
• Sophisticated monitoring and fault diagnostics
• Fused output protection for pump circuit
• Varistor high voltage spike protection
• RTD type 1000 Ω sensors
• Adjustable high limit temperature of storage tank
• Evacuated tube & freeze recirculation functions
• Vacation overheat protection
• Accessible side-mounted on, off, auto switch
• Three temperature sensor inputs, one 120 VAC output
• Pump protection activated when collector reached 266 °F

Steca TR 0301 U

Temperature Differential Controller
3 inputs / 1 output

Display

1. Temperature sensor symbols
2. Displays the temperature values and faults, e.g. short circuit, interruption or SYS = system error
3. Holiday function
4. Anti-freeze function
5. Selecting the temperature unit °F / °C
6. Tube collector function
7. Setting the maximum storage tank temperature
8. Solar circuit symbols
9. Displays message “Maximum storage tank temperature has been reached”
10. Warning display if faults occur, e.g. short circuit, interruption or SYS = system error
11. Displays message for evaporation of the collector fluid
12. Displays message for sufficient heat supply
The Steca model **TR 0301 U** differential temperature control provides automatic, safe and reliable operation of domestic solar water heating systems. The **TR 0301 U** output is wired to a pump that circulates the heat transfer fluid between the solar thermal collectors and the storage tank during the course of the day. This microprocessor-based **TR 0301 U** utilizes two RTD (resistance temperature detector) type sensors to monitor collector and tank temperatures with digital accuracy. The LCD gives the homeowner a variety of real time information including system temperatures at up to three separate locations. The consistent use of simple pictograms ensures ease of operation and troubleshooting.

In addition to the primary function of turning the circulating pump on and off during the day, the **TR 0301 U** provides important diagnostic and safety functions. For example, the LCD pictograms will indicate fault conditions such as sensor shorts or pump failures. The installation manual also clearly describes the fault symptoms, possible causes and remedies. The **TR 0301 U** features a total of three inputs for recording temperature and one 120 VAC output for the circulating pump. Varistors protect the sensor inputs against high voltage spikes. The load side is fuse protected. The control package includes two RTD type sensors, a seven foot line cord and a spare fuse. An optional third sensor displays the upper tank temperature and eliminates the need for an analog thermometer and fittings.

The numerous additional features of the **TR 0301 U** include an adjustable high limit (32° F - 205° F), an evacuated tube collector function, vacation overheat protection to minimize collector stagnation, and a freeze-recirculation option. Temperatures can be displayed in either Fahrenheit (°F) or Celsius (°C).

### Technical Data TR 0301 U

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>120 VAC, 60 Hz [optional 240 VAC, 60 Hz]</td>
</tr>
<tr>
<td>Self consumption</td>
<td>≤ 0.001 HP</td>
</tr>
<tr>
<td>3 inputs for temperature recording</td>
<td>Pt1000</td>
</tr>
</tbody>
</table>
| 1 output                        | Switch relay; Switching performance max. 0.5 HP (120 V~); 1 HP (240 V~);
| Fuse protected                  | Fuse: Littelfuse 215.004 |
| Line cord                       | 7', 18 AWG rated at 221°F |
| Display                         | Animated LCD display, 2-color background |
| Protection class                | IP 20/DIN 40050 |
| Permitted ambient temperature   | 32 to +113 °F (0 to +45 °C) |
| Installation                    | Wall-mounted with screws |
| Weight                          | 19.54 oz (0.55 kg) include cable |
| Case                            | Recyclable 3-piece plastic case |
| Dimensions                      | 6.3”(W) x 6.18”(H) x 1.85”(D) (160 L x 157 B x 47 H mm) |
| Temperature sensors 2x Pt1000   | Collector sensor: 59 inch (1.5 m) silicone cable with bushing (Measuring range up to +356 °F (+180 °C)) |
|                                 | Storage tank sensor: 11.8 inch (0.3 m) twisted single conductor flat surface sensors with compression cable lug (Measuring range up to 222 °F (+105 °C)) |
| Available from:                 | Standard; without connection cable |
|                                 | Prefabricated; with mains connection cable and pump socket |

### Dimensions

[Diagram of dimensions]

### System setup

[Diagram of system setup]

### Overview of the device versions

[Diagram of device versions]

### Sensors

[Diagram of sensors]

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Steca TR 0301 U