Overview
The UT32A-D dual-loop digital indicating controllers employ an easy-to-read, 14-segment large color LCD display, along with navigation keys, thus greatly increasing the monitoring and operating capabilities. A ladder sequence function is included as standard. The short depth of the controller helps save instrument panel space.

The UT32A-D has a DIN rail mounting type (with option code /MDL). For more details, please see General Specification GS 05P08D81-01EN.

Features
• Dual-loop control is available.
• A 14-segment, active (PV display color changing function) color LCD display is employed. Two five-digit, high-resolution displays are possible. Alphabet letters can be displayed in an easy-to-read manner. The guide display shows parameter names.
• Easy to operate
  Navigation keys (SET/ENTER and Up/Down/Left/Right arrow keys) are employed to facilitate making settings.
• 65 mm depth
  The small depth enables the mounting in a thin and small instrumented panel.
• Ladder sequence function is included as standard. This function allows for creating a simple sequence control. Dedicated LL50A Parameter Setting Software (sold separately) allows for performing programming using a ladder language.
• Quick setting function
  Setting only the minimum necessary parameters for operation is possible.
• Equipped with a multitude of functions
  Universal I/O is included as standard. PID control, ON/OFF control, etc. are available.
• LL50A Parameter Setting Software (sold separately)
  The parameters and ladder programs of UTAdvanced digital indicating controller can be built from a PC using this software. It makes data management even easier.
• Dust-proof and drip-proof
  IP66 (for front panel) (Not applicable to side-by-side close mounting.)
  NEMA4 (Hose-down test only)

Functional Specifications
Control Specifications
(1) Control Mode
  Single-loop control
(2) Control period
  200 ms

Table of Number of Inputs and Outputs

<table>
<thead>
<tr>
<th>Model and suffix code</th>
<th>Number of analog input points</th>
<th>Number of analog output points</th>
<th>Number of contact input points</th>
<th>Number of contact output points</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT32A-Dx023</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Control Computation Function
(1) Types of control
  • PID control
  • ON/OFF control
(2) Control Computation Function
  (a) Target setting point and the number of PID parameter groups
  Respectively, four sets of target setpoints, alarm setpoints, and PID parameters can be set.
  (b) Selecting the PID parameter group
  The following PID parameter groups can be selected.
  • Target setpoint number (SPNO) (The PID number can be set arbitrarily.)
  • Measured input zone PID
  • Target setpoint zone PID
  • Reached target setpoint zone PID
  (c) Auto-tuning
  • Tuning results can be selected from two options, Normal or Stable.
  • Tuning output limit can be set.
  (d) “Super” function: Overshoot-suppressing function
  (e) “Super 2” function: Hunting-suppressing function
  (f) STOP preset output function
  (g) Input ERROR preset output function
  (h) MANUAL preset output function

(3) Operation Mode Switching

<table>
<thead>
<tr>
<th>Operation mode switching</th>
<th>AUTO/MANUAL and RUN/STOP switching</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE/LOCAL switching</td>
<td>REMOTE/DOLOCAL switching (only model with communication option)</td>
</tr>
</tbody>
</table>

(4) Control Parameter Setting Range

<table>
<thead>
<tr>
<th>Proportional band</th>
<th>0.1 to 999.9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integral time</td>
<td>1 to 6000 sec. or OFF (using manual reset)</td>
</tr>
<tr>
<td>Derivative time</td>
<td>1 to 6000 sec. or OFF</td>
</tr>
<tr>
<td>ON/OFF control hysteresis (one or two hysteresis points)</td>
<td>0.0 to 100.0% of measured input range width</td>
</tr>
<tr>
<td>Preset output value</td>
<td>-5.0 to 105.0% (however, 0 mA or less cannot be output)</td>
</tr>
<tr>
<td>High/low output limiter</td>
<td>0.1 to 105.0%</td>
</tr>
<tr>
<td>Low limit setpoint &lt; high limit setpoint</td>
<td></td>
</tr>
<tr>
<td>Tight shut function</td>
<td>When manual control is carried out with 4 to 20 mA output, control output can be reduced to about 0 mA.</td>
</tr>
<tr>
<td>Rate-of-change limiter of output</td>
<td>0.1 to 100.0%/sec., OFF</td>
</tr>
</tbody>
</table>
Alarm Functions

- Types of Alarm (loop-1 and loop-2)

<table>
<thead>
<tr>
<th>Measured value alarm</th>
<th>Deviation alarm</th>
<th>Rate-of-change alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV (measured value) high/low limit alarm</td>
<td>Deviation high and low limits alarm</td>
<td>PV rate-of-change alarm</td>
</tr>
<tr>
<td>Deviation high and low limits alarm</td>
<td>Deviation within high and low limits alarm</td>
<td></td>
</tr>
<tr>
<td>PV (setpoint) high/low limit alarm</td>
<td>Target SP deviation high and low limits alarm</td>
<td></td>
</tr>
<tr>
<td>Target SP high/low limit alarm</td>
<td>Target SP deviation within high and low limits alarm</td>
<td></td>
</tr>
<tr>
<td>Setpoint alarm</td>
<td>Output alarm</td>
<td>Other alarms</td>
</tr>
<tr>
<td>Control output high/low limit alarm</td>
<td>Heater disconnection alarm (for /HA option)</td>
<td>Self-diagnosis alarm</td>
</tr>
<tr>
<td>Analog input PV high/low limit alarm</td>
<td>Cool control output high/low limit alarm</td>
<td>FAIL</td>
</tr>
<tr>
<td>PV rate-of-change alarm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Alarm Functions

<table>
<thead>
<tr>
<th>Alarm output action</th>
<th>Number of alarm settings</th>
<th>Number of alarm output points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm stand-by action</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Alarm latch (forced reset) function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm hysteresis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm ON/OFF delay timer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Alarm Functions

<table>
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<th>Alarm output action</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>Alarm hysteresis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm ON/OFF delay timer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contact I/O Function

This function allows for allocating the input error condition, operation condition, alarm condition or other conditions to the contact input and contact output. AUTO/MAN, REMOTE/LOCAL, and STOP/START can be switched individually or simultaneously both in loop-1 and loop-2.

<table>
<thead>
<tr>
<th>Contact input</th>
<th>Contact output</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO/MANUAL switching</td>
<td>Alarms 1 through 4</td>
</tr>
<tr>
<td>REMOTE/LOCAL switching (only model with communication option)</td>
<td>Status output</td>
</tr>
<tr>
<td>STOP/START switching</td>
<td></td>
</tr>
<tr>
<td>Switching to AUTO</td>
<td></td>
</tr>
<tr>
<td>Switching to MANUAL</td>
<td></td>
</tr>
<tr>
<td>Switching to REMOTE (only model with communication option)</td>
<td></td>
</tr>
<tr>
<td>Switching to LOCAL (only model with communication option)</td>
<td></td>
</tr>
<tr>
<td>AUTO-TUNING START/STOP switching</td>
<td></td>
</tr>
<tr>
<td>LCD backlight ON/OFF switching</td>
<td></td>
</tr>
<tr>
<td>Message interrupt displays 1 through 4</td>
<td></td>
</tr>
<tr>
<td>SP number specification</td>
<td></td>
</tr>
<tr>
<td>PID number specification</td>
<td></td>
</tr>
<tr>
<td>Manual preset output number specification</td>
<td></td>
</tr>
</tbody>
</table>

Ladder Sequence Function

(1) Number of I/O Points

<table>
<thead>
<tr>
<th>Number of I/O Points</th>
<th>Number of I/O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital input points</td>
<td>3</td>
</tr>
<tr>
<td>Digital output points</td>
<td>3</td>
</tr>
</tbody>
</table>

(2) Types of Command

<table>
<thead>
<tr>
<th>Number of commands</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of basic command types</td>
<td>13</td>
</tr>
<tr>
<td>Load, AND, OR, Timer, Counter, etc.</td>
<td></td>
</tr>
<tr>
<td>Number of application command types</td>
<td>73</td>
</tr>
<tr>
<td>Comparison, reverse, addition/subtraction/multiplication/division, logic operation, high/low limiter, etc.</td>
<td></td>
</tr>
</tbody>
</table>

(3) Sequence Device

<table>
<thead>
<tr>
<th>Types of device</th>
<th>Number of points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital I/O</td>
<td>Input relay 3</td>
</tr>
<tr>
<td>Output relay 3</td>
<td></td>
</tr>
<tr>
<td>Internal device</td>
<td>M relay (bit data) 256</td>
</tr>
<tr>
<td>DAT register (data) 28</td>
<td></td>
</tr>
<tr>
<td>P register (parameter) 10</td>
<td></td>
</tr>
<tr>
<td>K register (constant) 30</td>
<td></td>
</tr>
<tr>
<td>Special device</td>
<td>Special relay (bit data) 12</td>
</tr>
</tbody>
</table>

Process data and process relay can be used besides the above-mentioned.

(4) Program capacity

Max Program capacity: 300 steps *

*: Available number of steps differs according to the parameters and using command.

(5) Ladder computation period

Ladder computation period is the same as control period.
## Communication Function

<table>
<thead>
<tr>
<th>Function</th>
<th>Method</th>
<th>Interface</th>
<th>Targets</th>
<th>Max connection</th>
</tr>
</thead>
</table>

*1: UT digital indication controllers can be connected.

### Physical Interface

**RS-485**
- **Standard**: EIA RS-485
- **Communication method**: Two-wire half-duplex or four-wire half-duplex, start-stop synchronization, and non-procedural
- **Baud rate**: 600, 1200, 2400, 4800, 9600, 19200 or 38400 bps, Peer to peer communication is fixed at 19200 bps
- **Maximum communication distance**: 1200 m
- **Terminating resistor**: 220Ω (External)
**Hardware Specifications**

**Display Specifications**
- PV display: 5-digit, 14-segment active color LCD (white/red)
- Character height: 13.0 mm
- Data display: 5-digit, 11-segment color LCD (orange)
- Bar graph display: 12-segment color LCD (orange)

**Universal Input Specifications (PV1, PV2)**
- Number of input points: 2
- Types of input, instrument range, and measurement accuracy (see the table below)

<table>
<thead>
<tr>
<th>Types of input</th>
<th>Instrument range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>K</strong></td>
<td>-270.0 to 1370.0°C</td>
<td>±0.1% of instrument range ±1 digit for 0°C or more</td>
</tr>
<tr>
<td></td>
<td>-200.0 to 1000.0°C</td>
<td>±0.2% of instrument range ±1 digit for less than 0°C</td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>-200.0 to 1200.0°C</td>
<td>±0.1% of instrument range ±1 digit for less than 0°C</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>0.0 to 400.0°C</td>
<td>±0.1% of instrument range ±1 digit for 0°C or more</td>
</tr>
<tr>
<td></td>
<td>-200.0 to 750.0°F</td>
<td>±0.2% of instrument range ±1 digit for less than 0°C</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>0.0 to 1800.0°C</td>
<td>±0.15% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>0.0 to 1700.0°C</td>
<td>±0.15% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td>0.0 to 1700.0°C</td>
<td>±0.15% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>-200.0 to 1300.0°C</td>
<td>±0.1% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>-200.0 to 1000.0°C</td>
<td>±0.25% of instrument range ±1 digit for less than 0°C</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>-200.0 to 600.0°C</td>
<td>±0.2% of instrument range ±1 digit for less than 0°C</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>0.0 to 400.0°C</td>
<td>±0.1% of instrument range ±1 digit for 0°C or more</td>
</tr>
<tr>
<td><strong>W</strong> (T)</td>
<td>0.0 to 2300.0°C</td>
<td>±0.2% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>Platinel 2</strong></td>
<td>0.0 to 1390.0°C</td>
<td>±0.1% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>PR20-40</strong></td>
<td>0.0 to 1900.0°C</td>
<td>±0.05% of instrument range ±1 digit for 800°C or more</td>
</tr>
<tr>
<td><strong>W7</strong></td>
<td>0.0 to 2000.0°C</td>
<td>±0.2% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>JPh100</strong></td>
<td>-200.0 to 500.0°C</td>
<td>±0.1% of instrument range ±1 digit</td>
</tr>
<tr>
<td><strong>P100</strong></td>
<td>-200.0 to 150.0°C</td>
<td>±0.1% of instrument range ±1 digit</td>
</tr>
</tbody>
</table>

The accuracy is that in the standard operating conditions: 23 ±2°C, 55 ±10%RH, and power frequency at 50/60 Hz.

1. ±0.3°C and ±1 digit in the range between 0 and 100°C
2. ±0.5°C ±1 digit in the range between -100 and 200°C
3. W-5% Re/W-26% Re (Hoskins Mfg.Co.), ASTM E988

- Applicable standards: JIS, IEC and DIN (ITS-90) for thermocouples and resistance-temperature detectors (RTD)
- Input sampling period: Synchronized to control period
- Burnout detection: Upscale and downscale of function, and OFF can be specified for the standard signal of thermocouple and resistance-temperature detector (RTD).
- For integrated signal input, 0.1 V or 0.4 mA or less is judged as a burnout.
- Input bias current: 0.05 μA (for thermocouple and resistance-temperature detector (RTD))
- Resistance-temperature detector (RTD) measured current: About 0.16 mA
- Input resistance: 1 MΩ or more for thermocouple/mV input
  - About 1 MΩ for voltage input
  - About 250 Ω for current input (with built-in shunt resistance)
- Allowable signal source resistance: 250 Ω or less for thermocouple/mV input
  - Effect of signal source resistance: 0.1 μV/Ω or less
  - 2 kΩ or less for DC voltage input
  - Effect of signal source resistance: about 0.01%/100 Ω
- Allowable wiring resistance:
  - Up to 150 Ω per line for resistance-temperature detector (RTD) input (conductor resistance between the three lines shall be equal)
  - Effect of wiring resistance: ±0.1°C/10 Ω
- Allowable input voltage/current:
  - ±10 V DC for thermocouple/mV/mA or resistance-temperature detector (RTD) input
  - ±20 V DC for V input
  - ±40 mA DC for mA input
- Noise reduction ratio:
  - 40 dB or more (at 50/60 Hz) in normal mode
  - 120 dB or more (at 50/60 Hz) in common mode
- Reference junction compensation error:
  - ±1.0°C (15 to 35°C)
  - ±1.5°C (-10 to 5°C and 35 to 50°C)

**Contact Input Specifications (DI)**
- Number of points: 3 points (standard)
- Input type: no-voltage contact input or transistor contact input
- Input contact capacity: 12 V DC, 10 mA or more
  - Be sure to use a contact with a minimum ON current of 1 mA or less
- ON/OFF detection:
  - For no-voltage contact input:
    - Contact resistance 1 kΩ or less in ON state
    - Contact resistance 50 kΩ or more in OFF state
  - Transistor contact input:
    - 2 V or less in ON state
    - Leak current 100 μA or less in OFF state
  - Status detection minimum hold time: control period + 50 ms
  - Application: SP switching, operation mode switching, event input
Control Output Specifications (OUT, OUT2)
- Number of points: 2
- Output functions:
  - Current output or voltage pulse output
- Current output:
  - 4 to 20 mA DC or 0 to 20 mA DC/load resistance 600 Ω or less
- Current output accuracy:
  - ±0.1% of span (however, ±5% of span for 1 mA or less)
  - The accuracy is that in the standard operating conditions: 23 ±2°C, 55 ±10%RH, and power frequency at 50/60 Hz
- Voltage pulse output
  - Application: time proportional output
  - ON voltage: 12 V or more/load resistance of 600 Ω or more
  - OFF voltage: 0.1 V DC or less
  - Time resolution: 10 ms or 0.1% of output value, whichever is larger

Control Relay Contact Output Specifications (OUT, OUT2)
- Types of contact and number of points: 2 points, 1a-contact point (common is separated)
- Contact rating
  - 1a-contact: 3 A at 240 V AC or 3 A at 30 V DC (resistance load)
  - The control output should always be used with a load of 10 mA or more.
- Application: time proportional output, ON/OFF output
- Time resolution for control output: 10 ms or 0.1% of output value, whichever is larger

Alarm Relay Contact Output Specifications (ALM)
- Types of contact and number of points: 3 points, 1a-contact points (common is separated)
- Contact rating
  - 1a-contact: 1 A at 240 V AC or 1 A at 30 V DC (resistance load)
  - The alarm output should always be used with a load of 1 mA or more.
- Application: alarm output, FAIL output, etc.

Heater Break Alarm Specifications (for /HA Option)
- Function: Measures the heater current using an external current transformer (CT) and generates a heater break alarm when the measured value is less than the disconnection detection value.
- Number of input points: 2 points
- Number of output points: 2 points (transistor contact output)
- CT input resistance: about 9.4 Ω
- CT input range: 0.0 to 0.1 Arms (0.12 Arms or more cannot be applied)
- Heater current alarm setting range: OFF, 0.1 to 300.0 Arms
- Heater current measured value display range: 0.0 to 360.0 Arms
- Recommended CT: CT from URD Co. Ltd.
  - CTL-6-S-H: CT ratio 800, measurable current range: 0.1 to 80.0 Arms
  - CTL-12L-30: CT ratio 3000, measurable current range: 0.1 to 180.0 Arms
- Heater current measurement period: 200 ms
- Heater current measurement accuracy: ±5% of CT input range span ±1 digit (CT error is not included)
- Heater current detection resolution: Within 1/250 of CT input range span
- Disconnection detection ON time: Minimum 200 ms. (for time proportional output)

Safety and EMC Standards
- Safety:
  - Compliant with IEC/EN 61010-1 (CE), IEC/EN 61010-2-201 (CE), IEC/EN 61010-2-030 (CE), approved by CAN/CSA C22.2 No. 61010-1 (CSA), approved by UL 61010–1.
  - Installation category: II
  - Pollution degree: 2
  - Measurement category: I (CAT I) (UL, CSA)
    - O (Other) (CE)
  - Rated measurement input voltage: Max. 10 V DC
  - Rated transient overvoltage: 1500 V (*)
    - This is a reference safety standard value for measurement category O of IEC/EN 61010-2-030. This value is not necessarily a guarantee of instrument performance.
- EMC standards:
  - Compliant with CE marking
    - EN 61326-1 Class A, Table 2 (For use in industrial locations).
    - EN 61326-2-3
      - The instrument continues to operate at a measurement accuracy of within ±20% of the range during testing.
    - EN 55011 Class A, Group 1
    - EN 61000-3-2 Class A
    - EN 61000-3-3
    - EMC Regulatory Arrangement in Australia and New Zealand
      - EN 55011 Class A, Group 1
  - KC marking: Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

Power Supply Specifications and Isolation
- Power supply
  - Rated voltage: 100 to 240 V AC (+10%/-15%), 50/60 Hz
  - 24 V AC/DC (+10%/-15%) (When the /DC option is specified)
  - Power consumption: 15 VA (For the /DC option, DC: 7 VA, AC: 11 VA)
- Storage: Nonvolatile memory
- Allowable power interruption time: 20 ms (at 100 V AC)
- Withstanding voltage
  - 2300 V AC for 1 minute between primary and secondary terminals (UL, CSA)
  - 3000 V AC for 1 minute between primary and secondary terminals (CE)
  - 1500 V AC for 1 minute between primary terminals 500 V AC for 1 minute between secondary terminals
    - (Primary terminals = Power (*) and relay output terminals, Secondary terminals = Analog I/O signal terminals, contact input terminals, communication terminals, and functional grounding terminals.)
    - Power terminals for 24 V AC/DC models are the secondary terminals.
- Insulation resistance
  - Between power supply terminals and a grounding terminal: 20 MΩ or more at 500 V DC
• Isolation specifications

<table>
<thead>
<tr>
<th>Internal circuits</th>
<th>Power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV1 (universal) input terminal</td>
<td></td>
</tr>
<tr>
<td>PV2 (universal) input terminal</td>
<td></td>
</tr>
<tr>
<td>Control (analog) output terminal (OUT, OUT2) (not isolated between the analog output terminals)</td>
<td></td>
</tr>
<tr>
<td>Control relay (2 a-contact) output terminal (OUT, OUT2)</td>
<td></td>
</tr>
<tr>
<td>Alarm-1 relay (a-contact) output terminal</td>
<td></td>
</tr>
<tr>
<td>Alarm-2 relay (a-contact) output terminal</td>
<td></td>
</tr>
<tr>
<td>Alarm-3 relay (a-contact) output terminal</td>
<td></td>
</tr>
<tr>
<td>Contact input terminal (3 points)</td>
<td></td>
</tr>
<tr>
<td>RS485 communication terminal</td>
<td></td>
</tr>
</tbody>
</table>

The circuits divided by lines are insulated mutually.

Environmental Conditions

Normal operating conditions
• Ambient temperature: -10 to 50°C (side-by-side mounting: -10 to 40°C)
• Ambient humidity: 20 to 90% RH (no condensation)
• Magnetic field: 400 A/m or less
• Continuous vibration (at 5 to 9 Hz) Half amplitude of 1.5 mm or less
  (at 9 to 150 Hz) 4.9 m/s² or less, 1 oct/min for 90 minutes each in the three axis directions
• Rapid vibration: 14.7 m/s², 15 s or less
• Impact: 98 m/s² or less, 11 msec.
• Installation altitude: 2,000 m or less above sea level
• Warm-up time: 30 minutes or more after the power is turned on
• Start-up time within 10 s

Transportation and Storage Conditions
• Temperature: -25 to 70°C
• Temperature change rate: 20°C per hour or less
• Humidity: 5 to 95%RH (no condensation)

Effects of Operating Conditions
• Effect of ambient temperature
  For voltage or TC input:
  ±1 μV/°C or ±0.01% of F.S. (instrument range)/°C, whichever is greater
  For RTD input:
  ±0.05°C/°C (ambient temperature) or less
  For current input:
  ±0.01% of F.S. (instrument range)/°C
  For analog output:
  ±0.02% of F.S./°C or less
• Effect of power supply fluctuation:
  For analog input: ±0.05% of F.S. (instrument range) or less
  For analog output: ±0.05% of F.S. or less
  (Each within rated voltage range)
## Block Diagram

**Loop-1 PV input**

- **PV input bias**: BS, FL
- **PV input filter**: BS, FL
- **PV display**: SP, PV

**Input ladder calculation program** (signal goes to the control computation as is when without ladder program). For ladder program, see the LLISA Parameters Setting Software User’s Manual.

**Output ladder calculation program** (signal goes to the output as is when without ladder program). For ladder program, see the LLISA Parameter Setting Software User’s Manual.

**Loop-1 Control computation**

- **Output limiter**: EPO, OH, OL
- **Manual operation**: Manual preset output
- **Manual preset output**: Manual preset output
- **Input error preset output**: Input error preset output
- **Preset output**: Preset output

**Output terminal assignment**

- Relay
- Current or voltage pulse

**Loop-2 PV input**

- **PV input bias**: BS, FL
- **PV input filter**: BS, FL
- **PV display**: SP, PV

**Output ladder calculation program** (signal goes to the output as is when without ladder program). For ladder program, see the LLISA Parameters Setting Software User’s Manual.

**Output ladder calculation program** (signal goes to the output as is when without ladder program). For ladder program, see the LLISA Parameter Setting Software User’s Manual.

**Loop-2 Control computation**

- **Output limiter**: EPO, OH, OL
- **Manual operation**: Manual preset output
- **Manual preset output**: Manual preset output
- **Input error preset output**: Input error preset output
- **Preset output**: Preset output

**Output terminal assignment**

- Relay
- Current or voltage pulse

**Terminal Parameter Function**

- Analog signal
- Contact signal
- Function

**Alarm**

- Alarm 1: (PV high limit)
- Alarm 2: (PV low limit)
- Alarm 3: (PV high limit)

**Output terminal assignment**

- Local
- Remote

**PV input**

- **PV type**: IN
- **Input Type**: IN
- **Input range/scale**: RH, RL
- **Input error**: SDP
- **SP range**: SH, SL

**Loop-2 PV input**

- **PV input bias**: BS, FL
- **PV input filter**: BS, FL
- **PV display**: SP, PV

**Output ladder calculation program** (signal goes to the output as is when without ladder program). For ladder program, see the LLISA Parameters Setting Software User’s Manual.

**Output ladder calculation program** (signal goes to the output as is when without ladder program). For ladder program, see the LLISA Parameter Setting Software User’s Manual.

**Loop-2 Control computation**

- **Output limiter**: EPO, OH, OL
- **Manual operation**: Manual preset output
- **Manual preset output**: Manual preset output
- **Input error preset output**: Input error preset output
- **Preset output**: Preset output

**Output terminal assignment**

- Relay
- Current or voltage pulse

**Terminal Parameter Function**

- Analog signal
- Contact signal
- Function
## Terminal Arrangement

### Terminal Arrangement for UT32A-D Single Loop Control

#### Loop-1 and Loop-2 control output

- **OUT2**
  - **OUT**
  
- **Contact output**
  - **ALM**
    - Terminals with output current (mA)
    - Terminals with output voltage (V)
    - Terminals with output current (mA)
    - Terminals with output voltage (V)

#### Power supply

- **24 V AC/DC power supply**
  - **Option code** /DC

#### RS-485 communication

- **Suffix code:** Type 2=1

#### DI

- **Contact input**
  - **DI3, DI2, DI1, COM**
  
- **No-voltage contact**
  - **UP**

#### Heater break alarm (HBA)

- **Option code:** /HA

#### Loop-1 PV input

- **PV1**
  - **PV input type is undefined.**

#### Loop-2 PV input

- **PV2**
  - **PV input type is undefined.**

#### Loop-1 and Loop-2 control output

- **OUT2**
  - **OUT**
  - **Loop-1 and Loop-2 control output**

#### Control output

- **Relay contact output**
  - **NO**
  - **NO**
  - **COM**
  
- **Contact rating: 240 V AC, 3 A**
  - **30 V DC, 3 A (resistance load)**

#### Loop-1 AUTO when DI1=ON

- **Loop-1 MAN when DI1=OFF**

#### Loop-2 AUTO when DI3=ON

- **Loop-2 MAN when DI3=OFF**

#### Loop-1 and Loop-2 STOP when DI2=ON

- **Loop-1 and Loop-2 RUN when DI2=OFF**

#### Functions can be changed.

#### External Dimensions and Panel Cutout Dimensions

**Unit: mm**

- **General mounting**: 70 min.
- **Side-by-side close mounting**: 145 min.

- **Terminal cover (option)**
  - **Bracket**
  - **Bracket**
  - **Bracket**

- **N** stands for the number of controllers to be installed. However, the measured value applies if N≥5.

- **Normal tolerance**: ±(value of JIS B 0401-1998 tolerance class IT18)/2
## Model and Suffix Code

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Option code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT32A</td>
<td>-D</td>
<td></td>
<td>Digital Indicating Controller (Power supply: 100-240 V AC) (provided with 3 DIs and 3 DOs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>Dual-loop type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Type 2:Functions 0 NS-485 communication (Max. 38.4 kbps, 2-wire/4-wire)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Display language Type 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Type 3:Fixed code None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-1</td>
<td>Display language Type 1: Basic control English (Default. Can be switched to other language by the setting.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-2</td>
<td>German (Default. Can be switched to other language by the setting.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-3</td>
<td>French (Default. Can be switched to other language by the setting.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-4</td>
<td>Spanish (Default. Can be switched to other language by the setting.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>Case color 0 White (Light gray)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Case color 1 Black (Light charcoal gray)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-00</td>
<td>Fixed code -00 Always “-00” (for Standard Code Model)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/HA</td>
<td>Option codes /HA Heater break alarm (*)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/DC</td>
<td>Power supply 24 V AC/DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/CT</td>
<td>Coating (*)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/CV</td>
<td>Terminal cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1: English, German, French, and Spanish are available for the guide display.
*2: The /HA option can be specified when the Type 2 code is "0." |
*3: When the /CT option is specified, the UT32A does not conform to the safety standards (UL and CSA) and CE marking (Products with /CT option are not intended for EEA-market).

## Items to be specified when ordering

Model and suffix codes, whether User’s Manual and QIC required.

## Standard accessories

Brackets (mounting hardware), Unit label, Operation Guide

## Special Order Items

<table>
<thead>
<tr>
<th>Model code</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL50A</td>
<td>-00</td>
<td>Parameter Setting Software</td>
</tr>
<tr>
<td>X010</td>
<td></td>
<td>See the General Specifications (*) Resistance Module</td>
</tr>
</tbody>
</table>

*: Necessary to input current signal to voltage input terminal.

## User’s Manual

Product user’s manuals can be downloaded or viewed at the following URL. To view the user’s manual, you need to use Adobe Reader 7 or later by Adobe Systems.

URL: http://www.yokogawa.com/ns/ut/im/