Co-innovating tomorrow™

Synaptic Business Automation creates sustainable value by connecting everything in our customers' organization. To realize this, Yokogawa integrates its business and domain knowledge with digital automation technologies, and co-innovates with customers to drive their business process transformation.

NOTICE

36 months after shipment.

● Before operating the product, read the user's manual thoroughly for proper and safe operation.

● If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

UTAdvanced

Find answers to the most frequently asked questions.

FAQ: http://www.yokogawa.com/ns/utadv/faq/

OpreX and Synaptic Business Automation are trademarks or registered trademarks of Yokogawa Electric Corporation. All brand or product names of Yokogawa Electric Corporation in this bulletin are trademarks or registered trademarks of Yokogawa Electric Corporation. All other company brand or product names in this bulletin are trademarks or registered trademarks of their respective holders.

Digital Indicating Controller
UTAdvanced

Digital Indicating Controller UT75A / UT55A / UT52A / UT35A / UT32A
Program Controller UP55A / UP35A / UP32A
Digital Indicator with Alarms UM33A

YOKOGAWA ELECTRIC CORPORATION
Control Instruments Business Division
http://www.yokogawa.com/
E-mail: ns@cs.jp.yokogawa.com

YOKOGAWA CORPORATION OF AMERICA
http://www.yokogawa.com/us/

YOKOGAWA EUROPE B.V.
http://www.yokogawa.com/eu/

YOKOGAWA ENGINEERING ASIA PTE. LTD.
http://www.yokogawa.com/sg/

3-Year Warranty

Subject to change without notice.
All Rights Reserved. Copyright© 2015, Yokogawa Electric Corporation

Sign up for our free e-mail newsletter
www.yokogawa.com/ns/

Printed in Japan, 902(KP)

Bulletin 05P01A02-01EN
Reliable and secure lineup

Welcome new members: 2-loop and DIN rail models, and the UP32A

Tools and functions that go easy on your equipment

Operation and clear display that go easy on the user

A variety of functions, and easy-to-connect communication

Helpful ladder sequence control function

Reliability
- RoHS/WEEE
- NEMA4*/IP66 Front Panel

* Hose down test only.

Space saving options
- 1/8th DIN 2-loop controller (UT32A-D)
- CC-Link communication available in a 48 x 96 mm (1/8 DIN) size
- 1/8th DIN Program controller (UP32A)
- DIN rail mounting controller (MDL option)

More UP55A program patterns
- 99 program patterns (AP option)
Tools and functions that go easy on your equipment

Setting and managing parameters

Easily edit settings from a PC while the unit is mounted on the controller board.

Settings are accessed through a dedicated adapter on the front panel. Maintenance of Ethernet-equipped controllers can be handled remotely.

- Set up parameters
- Controller data read/write/compare
- Data management
- Print parameters and data, and create reports
- Configure user defaults

Set up right out of the box

No power cable required

LL50A contents: Light-loader adapter, Dedicated cable
With DIN rail mountable controllers (/MDL option), used to perform maintenance when powered. Free software now available on the web for converting GREEN series parameters to UTAdvanced.

Can be supported with a single spare unit

Universal Input and Output

Supports different sensors, heaters, and actuators

- TC
- RTD
- 2-wire transmitter
- 4 to 20 mA current
- Voltage pulse
- Relay contact
- Motor operated valve*

*Select a position proportional model for motorized valve control output.

User defaults function

Shorter recovery time

The LL50A lets you configure user default values.

Ever get lost in a maze of configuration changes? Now you can restore user-personalized default parameters. Recover quickly without disturbing operations.

Easily restored by key operation

Save space on the panel and control board

Side-by-side close mounting on DIN rails in the board

- DIN rail
- Status display (LED)
  - Green: Normal
  - Red: Abnormal

- Ambient temperature: -10 to 50 °C
  (0 to 50 °C with CC-Link installed)
- 2-loop control in a single unit
  (UT32A-D/MDL)
- Displays controller and I/O status

UT32A/MDL
UT52A/MDL
UT32A-D/MDL
Bright & Easy to Read Active Color LCD Display

See the status of your process conditions INSTANTLY!

- Alarms
- Deviation values
- Measured values
- Contact input
- Choice of fixed white or red

Navigation guides and keys make it easy to operate

Controller will guide the key you press.

Fast one-touch operations

Programmable Function Keys

You can assign frequently used operations (start/stop, remote/local, etc.) and parameter entry screens (PID value, etc.) to function keys for one-touch availability.
A variety of functions, and easy-to-connect communication

**Communication protocol**

- **Connect to PLCs easily without programming!**
- Modbus/TCP
- Modbus RTU/ASCII
- Ladder communication PC-Link

**Open Network**

- **Recipe management**
- **Remote monitoring**

You can easily set setpoints (SP), PID, and alarms from a PLC.

**Modbus/TCP**

Modbus TCP, a protocol that allows the controller to connect to Ethernet network and have the ability to exchange data with the computers or devices on that network.

- **Gateway function allows RS-485 Modbus devices to communicate via Ethernet.**
- **Physical layer: 10 BASE-T/100 BASE-TX**
- **Max. number of connection: 2**

**Peer to Peer**

The use of the ladder sequence program makes it possible to exchange analog data and status data between communication-capable UTs.

Example: A UT in which an input error occurs sends a signal to another UT to enable that UT switch to MAN operation, thus shifting the whole system into a safe mode. In such a case, the safety mechanism can be built into the UTAdvanced and is not required in the host system.

* Create ladder sequence programs by the LL50A Parameter Setting software (sold separately).

**Coordinated operation**

Coordinated operation: This function syncs operation of the slave with that of the master through Yokogawa’s proprietary communication protocol.

- **Finely adjust the temperature setting of the slave with the bias and ratio**
- **Upstream PLC or other device not needed for tuning**
- **No programming means fewer engineering manhours**

**Space-saving built-in CC-Link models**


**Recipe management**

Using the UTAdvanced ladder sequence control function offers a low-cost alternative for applications typically dependent on compact units such as PLCs, timers, and relays. Plus, it saves wiring labor and space. The ladder sequence control function supports the customized specifications of your customers.

**Recipe management**

You can recreate the operation of timers and relays with the controller’s ladder programs.

**Remote monitoring**

You can easily set setpoints (SP), PID, and alarms from a PLC.

**Recipe management**

Recipe management

**Remote monitoring**

Remote monitoring

**RS485**

Up to 4 master units, total 32 units

* Requires parameter setting software (sold separately).
Using the UTAdvanced ladder sequence control function offers a low-cost alternative for applications typically dependent on compact units such as PLCs, timers, and relays. Plus, it saves wiring labor and space. The ladder sequence control function supports the customized specifications of your customers.

* Requires parameter setting software (sold separately).

**Benefits**

- Less wiring
- Fewer instruments
- Lower cost
- Space-saving
- Highly customizable

**Example: Alarm annunciator**

**How it works**

- Lamp blinks on alarm
- Lights while checking the active alarm
- Goes out while checking stopped alarm

**Check alarms with function keys**

**Example: On delay timer**

**How it works**

- Hold down the F1 key for 5 sec. or longer to turn relay ON
- Release F1 key to turn relay OFF
## Product Line-up

<table>
<thead>
<tr>
<th>Model</th>
<th>UT75A</th>
<th>UT55A</th>
<th>UT52A</th>
<th>UT35A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (W x H x D)</td>
<td>96x96x65mm</td>
<td>48x96x65mm</td>
<td>96x96x65mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>500 g or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIN rail mountable (no display/keys)</td>
<td>No</td>
<td>Yes (option)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input sampling period (control scan period)</td>
<td>50, 100, 200ms</td>
<td>200ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of analog inputs</td>
<td>PV input</td>
<td>1: Standard type</td>
<td>2: Dual-loop type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aux. analog input</td>
<td>2 (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (non-isolated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV input indication accuracy</td>
<td>±0.1 % of F.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTD : JPt100, Pt100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mA : 4 to 20mA, 0 to 20mA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mV : 1 to 5V, 0 to 10V, 0 to 2V, 0.4 to 2V, -10 to 20mV, 0 to 100mV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of analog outputs</td>
<td>Control output</td>
<td>1</td>
<td>1 (only with 1 control output)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retransmission output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control output type</td>
<td>Relay output : Contact rating (250VAC, 3A or 30 VDC, 3A) Normally open, 2 point (Heat/cooling output in UT52A/UT35A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current output : 4 to 20mA, 0 to 20mA, 0 to 4mA, 0 to 0mA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voltage pulse output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retransmission output (aux. output)</td>
<td>4 to 20mA, 0 to 20mA, 0 to 4mA, 0 to 0mA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of digital inputs</td>
<td>Standard</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>14</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Number of digital outputs</td>
<td>Standard</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>8</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Communication</td>
<td>RS485</td>
<td>Ethernet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CC-Link</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROFIBUS-DP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DeviceNet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RS485</td>
<td>Ethernet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CC-Link</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROFIBUS-DP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DeviceNet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of SP groups</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of PID groups</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of alarm groups</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of ladder steps</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of ladder instructions</td>
<td>Basic instruction : 15</td>
<td>Application instruction : 111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of program patterns</td>
<td>Standard</td>
<td>1</td>
<td>Application instruction : 13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max. (option)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of segments</td>
<td>Standard</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max. (option)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>100-240VAC or 24VAC/DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (at 100V AC)</td>
<td>18VA</td>
<td>15VA</td>
<td>18VA</td>
<td></td>
</tr>
<tr>
<td>Screw terminal size</td>
<td>M3.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24V DC loop power supply</td>
<td>No</td>
<td>Yes (option)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater burnout alarm</td>
<td>Yes (option)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust and waterproof level of front panel</td>
<td>NEMA4*/IP66 Front Panel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excludes DIN rail mounting types</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RoHS/WEEE</td>
<td>Compliant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety and EMC standards</td>
<td>GS 05P01B41-01EN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS 05P01C31-01EN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS 05P01C81-01EN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS 05P01D31-01EN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS 05P01D81-01EN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>Dimensions</td>
<td>Voltage Supply</td>
<td>RoHS/WEEE</td>
<td>Weight</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>----------------</td>
<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>UT32A</td>
<td>48 x 96 x 65 mm</td>
<td>100-240VAC or 24VAC/DC</td>
<td>Compliant</td>
<td>500 g or less</td>
</tr>
<tr>
<td>UT32A-D</td>
<td>48 x 96 x 65 mm</td>
<td>100-240VAC or 24VAC/DC</td>
<td>Compliant</td>
<td>500 g or less</td>
</tr>
<tr>
<td>UP55A</td>
<td>96 x 96 x 65 mm</td>
<td>100-240VAC or 24VAC/DC</td>
<td>Compliant</td>
<td>500 g or less</td>
</tr>
<tr>
<td>UP35A</td>
<td>48 x 96 x 65 mm</td>
<td>100-240VAC or 24VAC/DC</td>
<td>Compliant</td>
<td>500 g or less</td>
</tr>
<tr>
<td>UM33A</td>
<td>96 x 48 x 65 mm</td>
<td>100-240VAC or 24VAC/DC</td>
<td>Compliant</td>
<td>500 g or less</td>
</tr>
</tbody>
</table>
Digital Indicating Controller UT55A/UT52A (Standard model)

Main Features
- Up to 4 analog inputs available
- 3 alarm relays with independent common terminals
- 500 steps of ladder logic control
- Simple operation
- Up to 18 DOs (various combinations available)

External Dimensions

Main Features
- 500 steps of ladder logic control
- Cascade control
- Industrial furnace temperature control
- Position proportional control for actuator motor

Application examples
Digital Indicating Controller UT35A/UT32A (Standard model)

Main Features

- 4 target setpoints and PID sets available
- 3 alarm relays with independent common terminals
- 300 steps of ladder logic control
- Simple operation
- Up to 8 DOs (various combinations available)

Maximum 4 points for alarm setting.

External Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Optional suffix codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT35A</td>
<td>Special type</td>
<td>/LP, /DR, /CT, /DC, /HA, /CV, /HA</td>
<td>Digital Indicating Controller (Power supply: 100-240 V AC) provided with intrinsically safe output or 15 V DC loop power supply, 2 DOs, and 3 DOs</td>
</tr>
</tbody>
</table>

Application examples

- Electric furnace

UT32A

- Recorder

Retransmission output

Thermocouple

4 to 20 mA DC

Electric furnace

- Heating/cooling control

UT35A

- Cooling (relay signal)

Cooling water

4 to 20 mA DC

Thermocouple

Thyristor

SCR

Heating unit

- Heating

4 to 20 mA DC

SCR

Thyristor

Thermocouple

Heating unit

*1: English, German, French, and Spanish are available for the guide display.

*2: The /LP option can be specified in the combination of Type 2 code (any of 0 or 1) and Type 3 code (any of 0 or 1).

*3: The /CT option can be specified only when the Type 1 code is “0” or “-2.”

*4: When the /CT option is specified, the UT35A does not conform to the safety standards (UL and CSA) and CE marking.
## Main Features

- DIN rail mounting
- Tidy appearance
- Up to 4 analog inputs available
- 3 alarm relays with independent common terminals
- 500 steps of ladder logic control
- Comes with a wealth of functions

## DIN Rail Mounting Controller

### External Dimensions

**UT55A/UT35A (with option /MDL)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>115</td>
</tr>
<tr>
<td>Depth</td>
<td>100</td>
</tr>
<tr>
<td>Height</td>
<td>55</td>
</tr>
</tbody>
</table>

**UT52A/UT32A (with option /MDL)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>115</td>
</tr>
<tr>
<td>Depth</td>
<td>100</td>
</tr>
<tr>
<td>Height</td>
<td>55</td>
</tr>
</tbody>
</table>

### Model and Suffix Code

**Model**: UT52A

**Suffix Code**: MDL

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic control</td>
<td>0</td>
</tr>
<tr>
<td>Type 2: Functions</td>
<td>0</td>
</tr>
<tr>
<td>Type 3: Open networks</td>
<td>0</td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td>MDL</td>
</tr>
</tbody>
</table>

**Model**: UT32A

**Suffix Code**: MDL

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic control</td>
<td>0</td>
</tr>
<tr>
<td>Type 2: Functions</td>
<td>0</td>
</tr>
<tr>
<td>Type 3: Open networks</td>
<td>0</td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td>MDL</td>
</tr>
</tbody>
</table>

**Model**: UT55A

**Suffix Code**: MDL

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic control</td>
<td>0</td>
</tr>
<tr>
<td>Type 2: Functions</td>
<td>0</td>
</tr>
<tr>
<td>Type 3: Open networks</td>
<td>0</td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td>MDL</td>
</tr>
</tbody>
</table>

**Model**: UT35A

**Suffix Code**: MDL

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic control</td>
<td>0</td>
</tr>
<tr>
<td>Type 2: Functions</td>
<td>0</td>
</tr>
<tr>
<td>Type 3: Open networks</td>
<td>0</td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td>MDL</td>
</tr>
</tbody>
</table>

### Functions

- **Type 1**: Basic control
  - Standard type
  - Type 2: Functions
  - Type 3: Open networks
  - Optional suffix codes

- **Type 2**: Functions
  - Type 3: Basic control
  - Type 2: Functions
  - Type 3: Open networks
  - Optional suffix codes

- **Type 3**: Open networks
  - Type 2: Functions
  - Type 3: Open networks
  - Optional suffix codes

### Optional suffix codes

- **MDL**: Mount on DIN rail (without the display parts and keys)
- **LP**: Power supply 24 V DC loop power supply
- **HA**: Heating/cooling type
- **CV**: CC-Link communication (with Modbus master function)
- **DC**: DeviceNet communication (with Modbus master function)
- **MDL**: Mount on DIN rail (without the display parts and keys)
- **RT**: RS-485 communication (Max. 38.4 kbps, 2-wire/4-wire)
- **MDL**: Mount on DIN rail (without the display parts and keys)
- **MDL**: Mount on DIN rail (without the display parts and keys)

### Main Features

- Digital indicating controller (power supply: 100-240 V AC)
- Provided with transistor output or 15 V DC loop power supply, 3 DIs, and 3 DOs (without the display parts and keys)
- DIN rail type
- 20 steps of ladder logic control
- 3 alarm relays with independent common terminals
- 500 steps of ladder logic control
- Comes with a wealth of functions

### Overview of Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT52A</td>
<td>MDL</td>
<td>Digital indicating controller (power supply: 100-240 V AC) provided with transistor output or 15 V DC loop power supply, 3 DIs, and 3 DOs (without the display parts and keys)</td>
</tr>
<tr>
<td>UT32A</td>
<td>MDL</td>
<td>Digital indicating controller (power supply: 100-240 V AC) provided with transistor output or 15 V DC loop power supply, 3 DIs, and 3 DOs (without the display parts and keys)</td>
</tr>
<tr>
<td>UT55A</td>
<td>MDL</td>
<td>Digital indicating controller (power supply: 100-240 V AC) provided with transistor output or 15 V DC loop power supply, 3 DIs, and 3 DOs (without the display parts and keys)</td>
</tr>
<tr>
<td>UT35A</td>
<td>MDL</td>
<td>Digital indicating controller (power supply: 100-240 V AC) provided with transistor output or 15 V DC loop power supply, 3 DIs, and 3 DOs (without the display parts and keys)</td>
</tr>
</tbody>
</table>
### Main Features

- Dual-loop control
- Space-saving
- Simple operation
- Ladder sequence programs can be built
- 3 alarms available as standard

### Panel mounting

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT32A</td>
<td>-D</td>
<td>Dual-loop type</td>
</tr>
</tbody>
</table>

#### Optional suffix codes

- Power supply 24 V AC/DC
- Software 
- Terminal cover

### DIN rail mounting

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT32A</td>
<td>MDL</td>
<td>Dual-loop type</td>
</tr>
</tbody>
</table>

#### Optional suffix codes

- Mount on DIN rail (without the display parts and keys)
- Power supply 24 V AC/DC
- Terminal cover

### Application examples

- **Incubator control**: Hatch eggs right on schedule by using overall heating control.

- **Control of reflow furnaces**

### External Dimensions

![UT32A-D Dimensions](image)

**UT32A-D**

- Unit: mm
- Mount on DIN rail (without the display parts and keys)
- Power supply 24 V AC/DC
- Terminal cover

---

**Disclaimer:**

*1: English, German, French, and Spanish are available for the touch-panel display.
*2: The /LP 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 ICT option are not intended for EEA-marked).
Program Controller UP55A (Standard model)

Product Line-up

- Operation are available for 2-loop control
- Switching between 20 Recipes
- Program pattern operation
- Easy to switch between recipes with a PLC
- The start and stop instructions can be run synchronously

Enhancing Productivity by Managing a Variety of Recipes

- Temperature/humidity control
- Thyristor
- Up to 16 PID values
- Up to 20 SPs
- Positioner
- 1 to 10 mm (panel thickness)

Program pattern operation

- Program pattern consists of up to 20 segments
- 2-loop program pattern can be operated

Easy to switch between recipes with a PLC

- Since CC-Link, Profibus, and DeviceNet are supported, it is easy to link to a PLC that manages recipes

Application examples

2-loop control with a single controller

- 2-loop synchronous and independent operation is available
  - The start and stop instructions can be run synchronously or independently.

- Program pattern operation and constant value operation are available for 2-loop control
  - A sequence can be run by combining the program pattern operation and fixed-point operation.

A variety of arithmetic instructions and large capacity ladder programs

- 15 basic instructions and 111 application instructions
- Ladder program capacity up to 1,000 steps

Square root, exponential, and logarithmic calculations are available

- Temperature/humidity and CP calculations are available

Digital Indicating Controller UT75A

Enhancing Productivity by Managing a Variety of Recipes

Switching between 20 Recipes

- Program pattern operation
- Easy to switch between recipes with a PLC

Program pattern operation

- Program pattern consists of up to 20 segments
- 2-loop program pattern can be operated

Easy to switch between recipes with a PLC

- Since CC-Link, Profibus, and DeviceNet are supported, it is easy to link to a PLC that manages recipes

Application examples

2-loop control with a single controller

- 2-loop synchronous and independent operation is available
  - The start and stop instructions can be run synchronously or independently.

- Program pattern operation and constant value operation are available for 2-loop control
  - A sequence can be run by combining the program pattern operation and fixed-point operation.

A variety of arithmetic instructions and large capacity ladder programs

- 15 basic instructions and 111 application instructions
- Ladder program capacity up to 1,000 steps

Square root, exponential, and logarithmic calculations are available

- Temperature/humidity and CP calculations are available

Digital Indicating Controller UT75A
Program Controller UP55A (Standard model)

Main Features
- Up to 99 program patterns
- 8 PV events, 16 time events, and 8 alarms can be monitored simultaneously
- Ladder sequence programs can be built
- Simple operation
- Up to 9 DIs and 8 DOs (combinations available)

External Dimensions

Program Controller UP35A/UP32A (Standard model)

Main Features
- Up to 4 program patterns
- 2 PV events, 4 time events, and 2 alarms can be monitored simultaneously.
- Ladder sequence programs can be built
- Simple operation
- Up to 8 DIs and 8 DOs (combinations available)

External Dimensions

Table: Model, Suffix code, Maximum number of patterns, Description

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Maximum number of patterns</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP55A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2 Function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: Model, Suffix code, Maximum number of patterns, Description

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Maximum number of patterns</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP35A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2 Functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: Model, Suffix code, Maximum number of patterns, Description

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Maximum number of patterns</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP32A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2 Functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional suffix codes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Product Line-up**

**Digital Indicator with Alarms UM33A**

**Main Features**
- Up to 9 alarm outputs (including one Fail)
- Input correction function
- CC-Link communication support
- 24 VDC sensor power supply available
- Simple operation

**External Dimensions**

5 digits, 14-segment large LCD display with PV color changing function.
You can set the display to change colors during alarms.

---

**Active Color PV Display**

**LL50A Parameter Setting Software**

**Parameter setting display**

**Program pattern creating display**

**Network profile creating display**

---

---

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM33A</td>
<td>*</td>
<td>Digital indicator with alarms \nIndicating device \nInternal supply 100-240 V AC, \ngrounded with \nretransmission output \n15 V DC loop power supply, \n2 DIs, and 3 D0s</td>
</tr>
</tbody>
</table>

**Model Suffix code**

- **Type 2**: \n  - Function: \n    - 1: RS-485 communication (Max. 38.4 kbps, 2-wire/4-wire) \n    - 2: 1 additional DO (c Kontakt relay) \n- **Type 3**: \n  - Open networks \n  - Display language (*3) \n  - Case color (*4) \n  - Optional suffix codes

**Note:**
- *1: When LP option is specified, the RS-485 communication of the Type 2 code “1” is 2-wire system.
- *2: Type 3 code “2” can be specified only when the Type 2 code is “0” or “2”.
- *3: English, German, French, and Spanish are available for the guide display.
- *4: Type 3 code “3” can be specified only when the Type 2 code is “0” or “2”.
- *5: When the LP option is specified, the UM33A does not conform to the safety standards IEC and CSA and CE marking. Products with LP option are not intended for ISA-market.
Main Features

**SUPER Function suppresses overshoot**

The field-proven SUPER function utilizes a built-in operator experience and fuzzy theory to deliver fine control and suppress overshoot.

- When wishing to suppress overshoot
- When wishing to reduce the startup time
- When load changes are significant
- When setpoint is changed frequently

**SUPER2 Function suppresses hunting**

The new SUPER2 function utilizes a built-in operator experience and modern control theory to deliver fine control and suppress hunting.

- With frequent load fluctuations
- With frequent external disturbances that take time to normalize
- When hunting still occurs after setpoint (SP) changes even if PID constants are set

**Auto-Tuning (AT) Function**

Autotuning is a function that evaluates process characteristics to automatically set optimal values relative to a target value that determines a PID constant. To implement autotuning, you can configure the following conditions.

- Two types of algorithms to calculate PID constants are available for selection.
  - Normal: Fast-rising PID constant
  - Stable: Slow-rising PID constant
- High and low output limits can be set individually for control output values during AT runtime.

**Quick Setting Function**

Minimum parameters necessary for operation can be set.

**Security Function**

The password function can prevent inadvertent changes to the parameter settings. If a password is set, the password is required when moving to the Setup Parameter Setting Display. When the password is verified, can be changed to the Setup Parameter Setting Display.

**message Function**

Using the message function and turning the contact input on/off, the message registered beforehand can be displayed on PV display by interrupt. The message is registered using LL50A Parameter Setting Software. The messages are limited to 20 alphanumeric characters. A maximum of four messages can be registered.

**Battery Free Memory Backup**

Nonvolatile memory is used for memory parameters backup. Service life is improved because no batteries, backup capacitors, or other components are used.
Small Cubic Controller

- Compact size (48 x 48 mm (1/16 DIN), depth 48 mm + 14 mm (terminals))
- Universal Input
- 3 colors active display
- Serial Communication

Over normal PV zone: Red color figures displayed
Normal PV zone: Green-color figures displayed
Under normal PV zone: Amber color figures displayed

Application

Heating and cooling (two outputs model)

Alarm detection with active display

Monitoring and setting from external device

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Suffix codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC10</td>
<td>-N</td>
<td>Temperature Controller with an universal input, one logic input, and one selectable I/O</td>
</tr>
<tr>
<td>Fixed code</td>
<td>-N</td>
<td>Always &quot;-N&quot;</td>
</tr>
<tr>
<td>Power supply</td>
<td>L</td>
<td>24 VAC/DC (Custom order)</td>
</tr>
<tr>
<td>Fixed code</td>
<td>C</td>
<td>Always &quot;C&quot;</td>
</tr>
<tr>
<td>OUT1-3</td>
<td>R N N</td>
<td>Relay output for On/Off control</td>
</tr>
<tr>
<td></td>
<td>R R R</td>
<td>Relay output with two alarm relays, or On/Off Heat/Cool control with one alarm</td>
</tr>
<tr>
<td></td>
<td>V N N</td>
<td>DCV output for SSR</td>
</tr>
<tr>
<td></td>
<td>V R R</td>
<td>DCV output for SSR with two alarm relays, or DCV and Relay output for Heat/Cool control with one alarm</td>
</tr>
<tr>
<td></td>
<td>V V R</td>
<td>Two DCV outputs for SSR with one relay (Custom order)</td>
</tr>
<tr>
<td></td>
<td>A R R</td>
<td>Analog output with two alarm relays, or Analog output and Relay output for Heat/Cool control with one alarm</td>
</tr>
</tbody>
</table>

General Specifications: GS05C01E81-01EN
Data Logging Software GA10

Monitors and records data from a variety of instruments via networks

Broad support for data loggers, recorders, digital indicating controllers, signal conditioners, power monitors, and power meters. Even acquires data from Modbus devices.

Specifications (Overview)
- Max. connectable units: 100
- Max. recording tags (channels): 2000
- Max. recording MATH tags (channels): 200
- Max. connectable clients: Unlimited (verified with 32)
- Scan interval: 100 ms or higher (using PC time), or scan interval of instruments (using instrument time)

General Specifications: GS 04L50B01-01E

Paperless Recorder SMARTDAC+GX10/GX20

Read/write measured data on other instruments via Modbus protocol.

Modbus RTU (RS-422A/485 connection)

The data of slave units can be displayed and saved on the GX/GP using the Modbus RTU function*.

* Communication function option is required.

General Specifications: GS 04L51B01-01E

RS232C/RS485 Converter ML2

The ML2 is a plugin type converter with 2 ports (RS-232C and RS-485) that performs isolation of communication signals, level conversion, and active control of drivers.

- Built-in RS-485 line termination resistance of 220 Ω (optional)
- Select auto or manual RS-485 driver active control
- Change communication speeds from 300 to 38400 bps in 8 stages with a rotary switch
- Echo-back ON/OFF switch (2-wire types only)
- Switch between 2-wire and 4-wire on the RS-485 side

General Specifications: GS 77J04L02-01E
Synaptic Business Automation creates sustainable value by connecting everything in our customers' organization. To realize this, Yokogawa integrates its business and domain knowledge with digital automation technologies, and co-innovates with customers to drive their business process transformation.

NOTICE

- Before operating the product, read the user’s manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

Find answers to the most frequently asked questions.

Synaptic Business Automation creates sustainable value by connecting everything in our customers’ organization. To realize this, Yokogawa integrates its business and domain knowledge with digital automation technologies, and co-innovates with customers to drive their business process transformation.