DAQWORX

DAQWORX is an integrated data acquisition software package that is highly scalable—suitable for users who require flexibility to connect to various measurement devices. It includes three software components: Base, Add-on, and Gate. DAQWORX includes an Ethernet interface, allowing users to connect to the network and remotely monitor their data acquisition system.

**Software Components**

- **Base Components**
  - **DAQLOGGER**: General-purpose data acquisition software that is capable of connecting to various measuring devices and measuring instruments to build a user-friendly, PC-based data acquisition system.
  - **DX100/DX200**: Data Server.
  - **CX1000/CX2000**: Digital Indicating Controller.
  - **DAQSTATION**: Data Acquisition Unit.

- **Add-on Components**
  - **AddStor**: Storage for data acquisition.
  - **AddMulti**: Acquires data from multiple channels.
  - **AddTrigger**: Performs advanced data logging using various triggers.
  - **AddEye**: Graphical human-machine interface (HMI) for creating monitoring windows for the operator.
  - **AddObserver**: Graphical human-machine interface (HMI) for creating monitoring windows for the operator.

- **Gate Components**
  - **GateOPC**: An interface for data acquisition from OPC servers.
  - **GateEye**: An interface for monitoring network camera images.
  - **GateMulti**: Acquires data from multiple channels.
  - **GateEXPLORER**: Automatic data file acquisition tool.
  - **GatePortal**: An interface for data acquisition from MODBUS devices.

**Digital Indicating Controllers**

- **Indicating Controllers**
  - UT190/150/321/351/420/460/520/551/750
  - US1000
  - UP150/351/560/750
  - LM331/351

- **Process Controller**
  - UD310/320/351

- **Program Controller**
  - Program with AddOn software.

- **Indicators with Alarms**
  - JT100-A

- **Manual Setters**
  - FS-1E

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**Network Solutions Business**

- Printed in Japan, 506(KP)

**Subject to change without notice.**

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A Complete Range of Exceptional Controllers

Select the One Suitable for Your Needs from YOKOGAWA Digital Indicating Controllers

- **UP351** Program Controller with Active Color PV Display
- **UP550** Program Controller
- **UP750** Program Controller
- **UM351** Indicator with Alarms with Active Color PV Display
- **UT351** Indicating Controller
- **UT450** Indicating Controller
- **UT551** Indicating Controller with Ethernet & Active Color PV Display
- **UT750** Indicating Controller
- **UT130** Indicating Controller
- **UT420** Indicating Controller
- **UT520** Indicating Controller
- **LL100, LL1100** Parameters Setting Tool
- **LL200, LL1200** Custom Computation Building Tool
- **US1000** Process Controller (72×144mm)

(Unit:mm)
Enhancing automation and process connectivity!

Plug & Play Operation

- **ETHERNET-based architecture** allows new processes to be added as easily. No need for extensive hardware to connect and run the application, because all information is managed on the server.
- Works with any Modbus TCP/IP compliant software. MODBUS function codes 03,06,08 & 16 are available.
- **Reduce labor cost in wiring and setup of communications network.** Faster connection speed.

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Reduce labor cost in wiring and setup of communications network. Faster connection speed.

Universal Input/Output

Easy-to-change input and output types

Universal Input

- Selectable among TC, RTD, mV and DC voltage.
- The type of input signal and input range can be changed at the customer side by some key operation or by using LL100 or LL1100 parameter setting tool.

<table>
<thead>
<tr>
<th>Thermocouple Type</th>
<th>TC, K, J, E, B, S, R, N, L, U, W, PL-J, J, Pt1000, JPt100</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTD Type</td>
<td>PT100, JPt100</td>
</tr>
<tr>
<td>DC Voltage Input</td>
<td>0 to 1V, 1 to 5V, 0 to 2V, 0 to 10V, 0 to 10V, 0 to 100mV</td>
</tr>
</tbody>
</table>

- **0.1% Indication Accuracy.**
- Models UT750, UP750 and US1000 have two universal inputs.
- Connectable up to two 2-wire transmitters simultaneously.

All GREEN SERIES instruments have a 15V Loop Power Supply (15V LPS) for a transmitter. Moreover, 24V LPS is also available simultaneously for some instruments as optional function. Model US1000 has two 24V LPS functions. Applicable models for 24V LPS: UT321/351, UT450, UT550, UM331/351, US1000.

Universal Outputs

- Selectable among Relay, Voltage Pulse and Current outputs.
- Relay output: ON/OFF control, Time-proportional PID control
- Voltage Pulse output: Time proportional PID control
- Current output: Continuous PID control

Heating/Cooling Control has two sets of universal outputs. Any combinations with Relay, Pulse and Current outputs are available. There are some limitations to UT320/350 controllers.

Drive the Motorized Control Valve by using Position Proportional PID.

The side wire input to feed back the valve position is also available.

Model UT551 & UT351 with Industrial Ethernet

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Model UT551 & UT351 with Industrial Ethernet

Controller with Active Color PV Display

See the status of your process conditions **INSTANTLY!**

- **Alarm Status**
  - Active color display changes from Green(normal) to Red(alarm)
- **Deviation Status**
  - Color changes based on a PV deviation from SP
- **User-defined Color**
  - Choose between Green or Red display for constant readings

The color of display automatically switches from GREEN to RED or RED to GREEN.

Controllers with Active Color PV Display

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Drive the Motorized Control Valve by using Position Proportional PID.

The side wire input to feed back the valve position is also available.

Model UT551 & UT351 with Industrial Ethernet

Controller with Active Color PV Display

See the status of your process conditions **INSTANTLY!**

- **Alarm Status**
  - Active color display changes from Green(normal) to Red(alarm)
- **Deviation Status**
  - Color changes based on a PV deviation from SP
- **User-defined Color**
  - Choose between Green or Red display for constant readings

The color of display automatically switches from GREEN to RED or RED to GREEN.
Powerful Control Functions

- Various functions for freely creating input/output-related computations

## 14 types of build-in Controller Functions

- PV auto-selector
- PV switching
- Cascade control
- Temperature & humidity control
- Loop control for backup
- Loop control with PV switching
- Loop control with PV auto-selector
- Loop control with PV-hold function
- Dual-loop control
- Cascade control with two universal inputs
- Loop control with PV switching and two universal inputs
- Loop control with PV auto-selector and two universal inputs
- Custom computation control

### SUPER Function suppresses overshooting

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

### SUPER 2 Function suppresses hunting

The new SUPER 2 function utilizes built-in operator experience and modern control theory to deliver fine control and suppress hunting.

#### Effect 1: For operation of empty furnace with the set PID

- When SUPER 2 function is not used
- When SUPER 2 function is used

#### Effect 2: For changing SP

- When SUPER 2 function is not used
- When SUPER 2 function is used

## Communication Functions

### MODBUS Communication

- A protocol used for communicating with a general-purpose personal computer and PLC
- Protocol: MODBUS RTU, MODBUS ASCII
- Baud Rate: 600bps to 38.4kbps
- (up to 9,600bps in case of MODBUS.)

### Personal Computer Link Communication

- A protocol used for communicating with a general-purpose personal computer, or UT link module and serial communication module of PLC (FA-M3 range-free controller).
- FA-M3 and a recorder can be connected in the same line.

### Ladder Communication

- A protocol used for communicating with a PLC. Communication with a computer link unit of the MELSEC-A series (made by Mitsubishi Electric Corporation) is possible.
- (※) FA-M3 is the PLC made by Yokogawa.

### Coordinated Operation

- In coordinated operation, a UP program controller or UT digital indicating controller is used as a master controller and multiple UT digital indicating controllers as slave controllers. The slave controllers are operated in accordance with the actions of the master controller.
## UT130/UT150 and UP150 Specification Table

<table>
<thead>
<tr>
<th>Model</th>
<th>UT130</th>
<th>UT150</th>
<th>UP150</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV/SP Data display</td>
<td>3 digits</td>
<td>4 digits</td>
<td>4 digits</td>
</tr>
<tr>
<td>PV Input</td>
<td>1 universal input (TCs, RTDs)</td>
<td>1 universal input (TCs, RTDs, mV, V)</td>
<td></td>
</tr>
<tr>
<td>PV Fatigue</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>PV Retransmission Output</td>
<td>PV Output EV2 EV1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV Retransmission Output</td>
<td>Voltage Pulse or 4 - 20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for heating</td>
<td>Relay contact, Voltage Pulse or 4 - 20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for cooling</td>
<td>Relay contact, Voltage Pulse or 4 - 20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for valve position</td>
<td>Relay contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Program patterns/segments</td>
<td>NA</td>
<td>1 program pattern/16 segments</td>
<td></td>
</tr>
<tr>
<td>SUPER Auto tuning</td>
<td>SUPER, Dynamic AT</td>
<td>SUPER, Dynamic AT</td>
<td></td>
</tr>
<tr>
<td>Control Outputs</td>
<td>Select from Relay or Voltage Pulse</td>
<td>Select from Relay, Voltage Pulse or 4 to 20mA</td>
<td></td>
</tr>
<tr>
<td>PV Representation Output</td>
<td>Not available (NA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Inputs</td>
<td>NA</td>
<td>NA</td>
<td>2 (Alarm or Timer function)</td>
</tr>
<tr>
<td>Digital Outputs</td>
<td>NA</td>
<td>2 (Alarm or Timer function)</td>
<td>2 (PV event and Time event)</td>
</tr>
<tr>
<td>RS485 Communication Protocols</td>
<td>Two wires, MODBUS, PC link, Modbus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td>General UL, CE, CSA, ETL, IP65 Protection, IP65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other specifications</td>
<td>Size: 40x40x100mm, Power supply: 24VAC/DC or 50 to 240V AC, Power consumption: 8VA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient T, Limits RH</td>
<td>0 to 55 °C, 20 to 90%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>UT130</th>
<th>UT150</th>
<th>UP150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output signal</td>
<td>Relay contact output for time proportional PID or inherent control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for heating</td>
<td>Relay contact output for time proportional PID or inherent control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for cooling</td>
<td>Relay contact output for time proportional PID or inherent control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output signal for valve position</td>
<td>Relay contact output for inherent control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Note 1: “AL” cannot be specified when specifying “HBA”, “” or “”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 2: “HBA” and “” cannot be specified at the same time when selecting heating/cooling type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 3: Sensor of heater burnout alarm is CT-6-S or CT-12-S36-8 (URD Co., Ltd., Japan) To be purchased separately</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## UT150/Z Motorized Valve Controller

Model UT150/Z has two relay contact outputs to control a motorized valve or a motorized actuator. Model UT150/Z does not need the valve position feedback signal. This controller estimates the valve position automatically.

UT150/Z has MAN mode for moving the valve position manually. Non-linear control function is available to prolong the valve life.

### UT150 Function Block Diagram

Functional block diagram for Heating and Cooling type UT150 controller.

![UT150 Function Block Diagram](image)

### Temperature Program

Number of program temperature: One

Accuracy of program temperature span: ±2% of span

Program operations: Start, Hold, Advance

![Temperature Program](image)
**UT321/UT420/UT520 Controllers**

**Active color PV display:** The color of display automatically switches from Green to Red, or Red to Green.

**Status indicator lamps:** Display alarm status (AL) and manual operation (MAN), and target setpoint (SP: 2, 3, 4).

**Light loader interface:** Communication port for parameter setting by personal computer.

**Model and Suffix Codes**

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Digital indicating controller, with Active color PV display</td>
<td></td>
</tr>
<tr>
<td>UT420</td>
<td>UT520</td>
<td></td>
</tr>
</tbody>
</table>

**Model UT321**

- Digital indicating controller, with Active color PV display
- Display: 4 digits Active Color / 4 digits
- PV Input: 1 universal input (T/Cs, RTDs, mV, V)
- WARNING: 0.1% ± 10%
- SP display: Displays target setpoint (SP), control output, valve opening, and parameter settings

**Options**

- Light loader interface: Communication port for parameter setting by personal computer

---

**UT351/UT450/UT551 Controllers**

**Active color PV display:**

**Model UT351**

- Digital indicating controller
- Display: 4 digits Active Color / 4 digits
- PV Input: 1 universal input (T/Cs, RTDs, mV, V)
- WARNING: 0.1% ± 10%
- SP display: Displays target setpoint (SP), control output, valve opening, and parameter settings

**Options**

- Communication port for parameter setting by personal computer

---

**UT321/420/520 Specification Table**

<table>
<thead>
<tr>
<th>Model</th>
<th>UT321</th>
<th>UT420</th>
<th>UT520</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV/SP Data display</td>
<td>4 digits Active Color / 4 digits</td>
<td>5 digits</td>
<td>5 digits</td>
</tr>
<tr>
<td>PV Input</td>
<td>1 universal input (T/Cs, RTDs, mV, V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WARNING</td>
<td>0.1% ± 10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary Analog Input</td>
<td>1 for remote SP &amp; secondary PV</td>
<td>1 for remote SP &amp; secondary PV</td>
<td></td>
</tr>
<tr>
<td>Control scan period</td>
<td>200ms</td>
<td>200ms</td>
<td>50, 100, 200ms</td>
</tr>
<tr>
<td>Control loops</td>
<td>1 (manual)</td>
<td>1 (manual)</td>
<td>1 (manual)</td>
</tr>
<tr>
<td>Control modes</td>
<td>MANUAL</td>
<td>MANUAL</td>
<td>MANUAL/ADJ. RUN/STOP</td>
</tr>
<tr>
<td>Number of Setpoint(SP)</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Algorithm</td>
<td>ON/OFF, PID (Continuous, Time-proportional)</td>
<td>ON/OFF, 3 position, PID (Continuous, Time-proportional), Heating &amp; Cooling</td>
<td></td>
</tr>
<tr>
<td>Control Outputs(MV)</td>
<td>Select from Relay, Voltage Pulse or 4 to 20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary Analog Output</td>
<td>1 point except for Heating/Cooling control (Can use with LPS15V)</td>
<td>1 point (Cannot use with LPS15V)</td>
<td>2 points when MV is relay output</td>
</tr>
<tr>
<td>Loop Power Supply (LPS)</td>
<td>2 points, 15V and 20V(point)</td>
<td>1 point, 15V</td>
<td></td>
</tr>
<tr>
<td>Digital Inputs</td>
<td>2 or 2 or 4</td>
<td>2 or 4</td>
<td>2 or 4</td>
</tr>
<tr>
<td>Digital Outputs</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>RS485 Communication Protocols</td>
<td>Four-wire, MODBUS, PC-link, Ladder or Coordinated Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td>General: UL, CE, CSA</td>
<td>Front Protection: IP55</td>
<td></td>
</tr>
<tr>
<td>Other Specifications</td>
<td>Size: 48(W)*96(H)*100(D)mm, Power supply: 90 to 264V AC, Power consumption: max. 20VA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient T, Limits RH</td>
<td>0 to 50°C, 5% to 95%RH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**UT351/450/551 Specification Table**

<table>
<thead>
<tr>
<th>Model</th>
<th>UT351</th>
<th>UT450</th>
<th>UT551</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV/SP Data display</td>
<td>4 digits Active Color / 4 digits</td>
<td>5 digits</td>
<td>5 digits</td>
</tr>
<tr>
<td>PV Input</td>
<td>1 universal input (T/Cs, RTDs, mV, V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WARNING</td>
<td>0.1% ± 10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary Analog Input</td>
<td>Not Available</td>
<td>1 for remote SP &amp; secondary PV</td>
<td>1 for remote SP &amp; secondary PV</td>
</tr>
<tr>
<td>Control scan period</td>
<td>200ms</td>
<td>200ms</td>
<td>50, 100, 200ms</td>
</tr>
<tr>
<td>Control loops</td>
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<tr>
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<td></td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
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<td>1 point, 15V</td>
<td></td>
</tr>
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<td>2, 3, 5 or 7</td>
<td>2, 3, 5 or 7</td>
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<tr>
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<td>3 or 4</td>
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</tr>
<tr>
<td>RS485 Communication Protocols</td>
<td>Available</td>
<td>Not Available</td>
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<td>Front Protection: IP55</td>
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<tr>
<td>Other Specifications</td>
<td>Size: 96(W)*96(H)*100(D)mm, Power supply: 90 to 264V AC, Power consumption: max. 20VA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient T, Limits RH</td>
<td>0 to 50°C, 5% to 95%RH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Model UT500 is also available.**
Custom Computation for Sophisticated Control

Custom computation allows simple operation sequences and signal computations specific to the application to be specified, which the standard controller mode cannot deal with. Input/output-related computations can be customized using 65 types of computation modules including arithmetical four-operation rules, logical operations, special calculations, etc.

Controllers Equip Custom Computation

Model | Description
--- | ---
UT750 | Indicating Controller
US1000 | Process Controller, except US1000-00
UP750 | Program Controller

Block Diagram of Custom Computation

The custom computation is executed in INPUT Block and OUTPUT Block. Max. number of custom computation modules:

US1000 | 50 modules for each block
US1000-00 | 30 modules for each block

Computations Modules

Addition / subtraction / multiplication / division, Processing absolute value / reciprocal, Selecting maximum / minimum / average, Keeping maximum / minimum value, Keeping value, Rate of change limiter, Switch, Limiter, Constant, AND, OR, Exclusive OR, NOT, Latch, Comparison (\(=, \leq, \geq\), \(<, >\)), Not equivalent, Within range, Sum, Timer, Ten-segment linearizer, Curve linearizer, Ratio, First order lag filter, Selection of PV from two inputs, Temperature and humidity calculation, Parameter setting.

Custom Display Function

Data displayed on front panel, can be configured by using Custom Display Configuration Function.

Applications

Temperature & Pressure Compensation for Gas Flow
### UP351/UP550/UP750 Specification Table

<table>
<thead>
<tr>
<th>Model</th>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP351</td>
<td>0</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Options: 0, 1 (communication functions)</td>
</tr>
<tr>
<td>UP550</td>
<td>-3</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Options: 0, 1 (communication functions)</td>
</tr>
<tr>
<td>UP750</td>
<td>0</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Options: 0, 1 (communication functions, auxiliary analog input)</td>
</tr>
</tbody>
</table>

### Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP351</td>
<td>-0</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>-3</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td>UP550</td>
<td>-0</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>-3</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td>UP750</td>
<td>0</td>
<td>Program controller, with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>-1</td>
<td>Program controller, Single-loop type</td>
</tr>
<tr>
<td></td>
<td>-5</td>
<td>Program controller, Dual-loop type</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Communication functions, auxiliary analog input</td>
</tr>
</tbody>
</table>

### UM331/UM351 Specification Table

<table>
<thead>
<tr>
<th>Model</th>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM331</td>
<td>0</td>
<td>Digital indicator with alarms, and with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Standard type with 24V DC loop power supply</td>
</tr>
<tr>
<td>UM351</td>
<td>0</td>
<td>Digital indicator with alarms, and with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Standard type with 24V DC loop power supply</td>
</tr>
</tbody>
</table>

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<td>-0</td>
<td>Digital indicator with alarms, and with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>-3</td>
<td>Standard type with 24V DC loop power supply</td>
</tr>
<tr>
<td>UM351</td>
<td>-0</td>
<td>Digital indicator with alarms, and with Active color PV display</td>
</tr>
<tr>
<td></td>
<td>-3</td>
<td>Standard type with 24V DC loop power supply</td>
</tr>
</tbody>
</table>

### UM330/UM350 Models

Models UM330 and UM350 are also available.

---

**Active color PV display:** Displays measured input value (PV) and error code in error occurrence

**Alarm indicator lamps (AL1 to AL4):**

**Parameter Setting display:** Displays parameter item and setpoint

**Model UP350 is also available.**
Light Loader Enabling Exceptionally Simple Setting

LL100/LL200

LL100/LL1200

For US1000 only

Via Ethernet Communication Connector

Via RS-485 Communication Terminals

ML2 recommended for RS-232C/RS-485 communication

Via Dedicated Adapter

Can be used while attached to the control panel.

● LL100/LL1100 PC-based Parameters Setting Tool

● Parameter setting functions

Parameters that determine controller functions can easily be set: controller model type, control mode (single-loop control, cascade control, loop control with PV switching, etc.), universal input/output functions, setup parameters, program parameters, and others.

● Program Pattern Setting Display(LL100)

● Multi-Monitoring Functions

Measured values (PV), setting values (SP), and control output values (OUT) are displayed as trends (online display). Colors can be applied to trends as desired. Just connect an instrument: the software detects the model automatically (up to 16 loops).

Dedicated adapter/RS-485 Communication/Ethernet Communication

● Multi-monitor Display

You can create custom computations by combining computation modules.

● Module connection display(LL200)

● LL200/LL1200 PC-based Custom Computation Building Tool

● Custom computation functions

You can create custom computations by combining computation modules.

● Related Instruments

● UT150L/350L Limit Controller

The UT150L and UT350L are an FM approval limit controllers that can be configured either as a high limit or a low limit controller by a user. The limit controllers feature universal input, two alarm outputs, retransmission output, a timer to count the time the setpoint is exceeded, and a register to retain the maximum temperature reached. The RS485 communication interface is available optionally.

UD310/UD320/UD350 Manual Setters

The UD320 series manual setters have PV display, and transmit 4 to 20mA DC by manual operation. It can be used as a remote set for digital indicating controllers like GREEN series controllers. The SP (target setpoint) will be output in 3 seconds after the change. The TC, RTD or Voltage input is possible as PV input. When the PV display is not necessary, it can be disappeared.

The two alarm outputs and a PV retransmission output are provided as standard.

The front panel has a splash-proof and dust-proof design.

UD310/UD320/UD350

UD310

UD320

UD350

UD310

UD320

UD350

 UD200 UD350

UD200

UD350

UD100

● µR1000 Intelligent Industrial Recorder

The µR1000 has carried over µR series high reliability and basic functions. The 101 × 16 full-dot matrix display allows it to monitor various on-site data.

• High reliability and high quality

• Fully contact-less technology

• High degree of integration using custom IC

Light weight (2.5 kg), exceeds the model for 6 dot model

Dust and splash proof front

• Variety of line-up

1 to 4 pen model, 6 dot model

• Variety of input types

Universal inputs

Many input sensors available (35 input types such as P50, P500-40 etc.)

• Superior ease-of-operation

VF101 × 16 full-dot matrix display

Versatile operation display

Easily navigable interactive setting

New chart cassette

White LED

• Analog record of computed result (with computation option: M1)

• Network function

Ethernet, RS485/422/424 communication option

Specifications

- PV / SP display: 4-digit PV / 4-digit SP

- Input type


  RTD: Pt100, JPt100

  Voltage (mV, V): 0 to 100mV, 0 to 5V, 1 to 5V, 0 to 10V

- Input accuracy

  Thermocouple: ±0.5°C/tolerance

  RTD: ±0.1°C/14Tgt

  Voltage (mV, V): ±0.5% ±14Tgt

- Sampling period for PV

  100ms

- Number of manual setpoint (SP)

  1

- Manual setting output

  4 to 20mA DC

- PV Retransmission output can be scaled 4 to 20mA DC

- Alarm output

  Number of outputs: 2 relay contact, COM terminal is common

- Types

  2 types

- Power supply

  100 to 240 VAC or 24VAC/DC(option)

- Safety and EMC standard

  CSA, CE and UL

- Construction (from protection)

  IP65 (UD310), IP55(UD320/UD350)

- Dimensions and weight

  UD310

  Width/Depth/Height: 101/150/80 (mm) / approx. 290g

  UD320

  Width/Depth/Height: 101/150/80 (mm) / approx. 290g

  UD350

  Width/Depth/Height: 101/150/80 (mm) / approx. 460g

- Gateway function

  Via Ethernet Communication

- Display type

  Multi-function digital display, bar, flag, DIO communication

- Colors

  Black, Red, Green, Blue

- Alarm levels

  Up to 4 alarms for each channel

- Alarm output

  High and low limit, differential high and low limit, and contact-less switches, alarm high and low limit

- Optional equipment

  Alarm output: RS485/422 communication, Ethernet communication, Communication function, Expansion input/output, Remote input etc.

- Dimensions

  Approx. 101/150/80 (mm)

- Weight

  2.7 to 2.5 kg

- Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL100</td>
<td>E10</td>
<td>LL100 PC-based parameters setting tool, except for UD310/320/350, UM330/351, UD1000, UT100 Series</td>
</tr>
<tr>
<td>LL200</td>
<td>E10</td>
<td>LL200 PC-based custom computation building tool (LL100 functions are included), for UT750, UT750</td>
</tr>
<tr>
<td>LL100</td>
<td>E10</td>
<td>LL100 PC-based parameters setting tool, for US1000</td>
</tr>
<tr>
<td>LL1200</td>
<td>E10</td>
<td>LL1200 PC-based custom computation building tool (LL100 functions are included), for US1000</td>
</tr>
</tbody>
</table>

- 2 Alarm outputs and PV retransmission output in 4 to 20mA built-in as standard.
AddObserver monitor design software, an add-on for DAQLOGGER, lets you create the custom monitors that are optimal for your measuring environment.

- Supports the Ethernet (Modbus/TCP protocols)
- Reads the input and holding registers from up to 200 channels of various measuring instruments.
- Supports the Ethernet (Modbus/TCP protocols)
- DAQLOGGER monitor design software, an add-on for DAQLOGGER, lets you create the custom monitors that are optimal for your measuring environment.

**Data Acquisition Components**

- DAQLOGGER: General purpose medium-speed (1 s max.) data acquisition supports to major data acquisition equipment models
- DAQ32Plus: High-speed (500 ms max.) data acquisition tool for use with DAQWORX
- MXLOGGER: Ultra high-speed (10 µs max.) data acquisition tool for use with DAQWORX
- DAQEXPLORER: Automatic data file acquisition tool for use with DAQSTATION and MobileCorder

**High-Value-Added Components**

- AddObserver: Graphical human-machine interface (HMI) for creating monitoring windows for the operator
- AddMulti: Acquires data through groups of channels on a group-by-group basis by combining various measurement conditions
- AddTrigger: Performs advanced data logging using a wide variety of trigger conditions
- AddObserver Client: Networked remote monitoring client software for DAQLOGGER
- AddObserver Runtime: Networked remote monitoring runtime software for AddObserver

**Interface Components**

- GateMODBUS: An interface for data acquisition from MODBUS devices to DAQLOGGER
- GateWT: An interface for data acquisition from WT-series power meters to DAQLOGGER
- GateMX100: An interface for data acquisition from MX100 to DAQLOGGER
- GateOPC: An interface for data acquisition from OPC servers to DAQLOGGER

**Data Acquisition Components**

- GateEye: An interface for distributing images from network cameras to DAQLOGGER
- GateControl: A software interface for connecting devices that support the YOKOGAWA NOVUS (UT100) or JUXTA Series
- GateMX: An interface for data acquisition from MX100 to DAQLOGGER
- GateCPU: An interface for data acquisition from CPU100 to DAQLOGGER

**Add-on Software**

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