μR10000/μR20000
Industrial Recorders
Get reliable, high quality output with the "Power of Paper!"

Recorders with the reliability of Yokogawa

µR10000/µR20000  Industrial Recorders

The Information You Need:

Easier to Acquire, Easier to Read

Data redundancy (SD memory card support) offers safety and reliability

µR20000 (4 pen model)

Superior Ease-of-Operation

- Large, VFD full dot matrix display
- 101 × 16, µR20000: 181 × 16
- Easily navigable interactive settings
- New chart cassette (enables historical trend review during recording)
- Internal illumination comes standard (high intensity white LED)

Multiple Functions Meet a Variety of Needs

- Broad input
  - 1-, 2-, 3-, or 4-pen models, and 6-, 12-, 18-, or 24-dot models
- Dot model (6-dot model) achieves one second measurement intervals
- Universal input
- Supports a wide range of input sensors
- Supports 35 types of input including optional TC, RTD.
- Mathematical functions
  - No. of Mathematical channels: 8 channels (Pen models), 12 channels (µR10000 dot model), 24 channels (µR20000 dot models)
  - Computation types: Arithmetic, logic, relation and static computations
- Recording: Pen model: Assignable to any pen, Dot model: Fully recordable
- Supports Ethernet or RS-422A/485 interfaces
- SD memory card support (option)
The critical factor in continuous recording using industrial recorders is reliability. Leveraging the latest technology, Yokogawa brings you that reliability in a compact, lightweight unit that embodies all the breakthroughs and know-how that Yokogawa has cultivated over the years.

**Servo Unit**
The pen servo unit takes advantage of an ultra-small, rack-and-pinion stepping motor. The servo unit is smaller and consumes less power than previous models.

**Splash-proof Front Door**
(conforms to DIN 40050-IP54)
The front door meets DIN 40050-IP54 standards in panel-mount installations.

**Safety/EMC Standards**
Yokogawa’s highly reliable industrial recorders support safety and EMC (electromagnetic compatibility) standards. And of course, the µR conforms to the European CE marking standard.

**Use of ASICs**
The recorders feature a high degree of functional integration through Yokogawa’s renowned ASICs (application specific integrated circuits, or custom ICs). They allow for reduced power consumption, increased lifespan of components, and suppression of heat emissions.

**Splash-proof Front Door**
(conforms to DIN 40050-IP54)
The front door meets DIN 40050-IP54 standards in panel-mount installations.

**Optional Terminals*”**
* Individual terminals are removable, making wiring and maintenance easy.

**Input Terminals*”**

**Ethernet (10Base-T)**
Data management possible via network.

**SD Memory Card*”**
With saving of measured data, printout of measured data (dot model only), and saving and loading of settings, µR recorders are now supporting redundancy.

**High-Voltage Solid State Scanners**
High-withstand voltage solid state relays have been adopted for scanners that switch the input signal. They enable high speed scanning of six dots per second, increase the life of the scanner, and reduce noise.

**Use of ASICs**
The recorders feature a high degree of functional integration through Yokogawa’s renowned ASICs (application specific integrated circuits, or custom ICs). They allow for reduced power consumption, increased lifespan of components, and suppression of heat emissions.

**Multi-Display (Displays a Variety of Screens) for Site Monitoring**
Displays that support our customers’ site monitoring needs with high visibility. Large VFD 101 x 16 full dot matrix using a variety of screens.

* "I want to use my recorder as a monitor."
  (Ethernet digital display 6 dot model)

* "I want to monitor the recorder position on an analog indicator."
  Flag display

* "I want to monitor alarms collectively."
  Channel alarm status display

**Matching the Displayed Operation Screen to the Application**
The user can switch between up to fifteen previously configured operation screens using the DISP key.

**Navigational Display Makes Setup a Snap**
The instrument features a simple configuration, with Operation mode for normal use, and Setting mode for use during setup. In Operation mode, measured values, time, and alarms are updated, and lists are printed. In Setting mode, you can enter measuring ranges, alarm values, and other parameters. Also, Setting mode offers a navigational display that eases entry of settings.

**Lightweight**
Innovative molding technology reduces the number of parts and increases the efficiency of production. Higher efficiency and low heat emissions have also been achieved through a high degree of integration and a new type of servo unit.

**6 dot model**
Navigational display to support setting selections.

(Example: Range Setting)

**SD Memory Card *”**
With saving of measured data, printout of measured data (dot model only), and saving and loading of settings, µR recorders are now supporting redundancy.

* Option

**Easier to Acquire, Easier to Read**
Uses a large, easy-to-view VFD 101 x 16 full dot matrix display. All settings are interactive, and supported by the navigational display, offering easier to read selections and superior ease of operation.
Delivers Confidence

The critical factor in continuous recording using industrial recorders is reliability. Leveraging the latest technology, Yokogawa brings you that reliability in a compact, lightweight unit that embodies all the breakthroughs and know-how that Yokogawa has cultivated over the years.

Matching the Displayed Operation Screen to the Application

The user can switch between up to fifteen previously configured operation screens using the DSP key.

Optional Terminals*

* Individual terminals are exchangeable, making wiring and maintenance easy.

Input Terminals*

Ethernet (10Base-T)

Data management possible via network.

Splash-proof Front Door

(conforms to DIN 40050-IP54)

The front door meets DIN 40050-IP54 standards in panel-mount installations.

High-Voltage Solid State Scanners

High-withstand voltage semiconductor relays have been adopted for scanners that switch the input signal. They enable high-speed scanning of six dots per second or twelve to twenty-four dots in 2.5 seconds, increasing the life of the scanner and reducing noise.

Use of ASICs

The recorders feature a high degree of functional integration through Yokogawa’s renowned ASICs (application specific integrated circuits, or custom ICs). They allow for reduced power consumption, increased lifespan of components, and suppressing of heat emissions.

Safety/EMC Standards

Yokogawa’s highly reliable industrial recorders support safety and EMC (electromagnetic compatibility) standards. And of course, the µR conforms to the European CE marking standard.

Multi-Display (Displays a Variety of Screens) for Site Monitoring

Displays that support our customers’ site monitoring mode with high visibility. Large VFD 181 x 16 full dot matrix using a variety of screens.

* I want to use my recorder as a monitor.*

Flag display

* I want to monitor alarms collectively.*

Channel alarm status display

Navigational Display Makes Setup a Snap

The instrument features a simple configuration, with Operation mode for normal use, and Setting mode for use during setup. In Operation mode, measured values, time, and alarms are updated, and lists are printed. In Setting mode, you can enter measuring ranges, alarm values, and other parameters. Also, Setting mode offers a navigational display that eases entry of settings.

Navigational display to support setting selections (Example: Range Setting)

Easier to Acquire, Easier to Use

Uses a large, easy-to-view VFD 181 x 16 full dot matrix display. All settings are interactive, and supported by the navigational display, offering easier to read selections and superior ease of operation.
Ethernet Support

With your GX/GP/GM or other supporting instrument on an existing network, the GA10 data logging software delivers centralized control of measured data. The software can also send e-mail alerts when certain events (alarms, specified times, creation of files, etc.) occur.

Serial Communications

Comes with RS-422A/485. The Modbus protocol (RTU, M-ASCII) is also supported.

E-mail Notification

- Alarm information
- Fixed time instantaneous values
- Report data

Any important portion within the full scale can be expanded for recording.

Recording areas (zones) for each channel can be recorded separately.

Data Logging Software GA10 (sold separately)

Entry and management of settings for measurement and calculation channels is easier than ever. Also, settings can be entered via communication interface.

RXA10 Configuration Software (sold separately)

Monitor and record on your PC!!

Data files saved on the SD memory card can be loaded and displayed. For specified data, you can also perform statistical computation over an area and export to ASCII, Excel, or other formats.

http://www.yokogawa.com/ns/

With Ethernet or RS-422/485 (optional), the software can gather measured data from a variety of instruments including the µR series onto the PC. This gives you power over your data including the ability to monitor remotely from the office, record electronically on the PC, and centrally manage data from multiple µR units.

24 dot model

Partial expanded recording

Any important portion within the full scale can be expanded for recording.

Variety of Networking Functions

Application Software That Expands the Possibilities of the µR

A Wealth of Recording and Printing Functions

Broad Functionality for Wide Range of Applications

The instrument comes with a full set of functions to cover the many needs of our customers and support their applications.
A Surprising Variety of Applications and Uses to Meet Every Customer's Needs.

Data Display and Recording for Water Purification Equipment (Acquisition of Data on Water Quality/Amount of Flow)
- Environmental data (water quality, amount of flow) is measured on-site and monitored from an office.
- Display and record temperature, flow, turbidity, pH, dissolved oxygen, and other factors, and monitor on-site.
- Automatic calculation of flow with the computation function (M1 option).
- Connect with Data Logging Software GA10 for remote monitoring in real time.

Temperature Monitoring and Recording in a Tunnel Kiln (Acquisition of Temperature Data for Ceramic Processing)
- Select from a variety of inputs (universal input)
- Monitor and record alarms on site upon occurrence of temperature data and abnormalities.
- Optimized monitoring through simultaneous display of multiple channels and AUTO screen switching.
- Connect Data Logging Software GA10 to control the operational conditions (temperature and alarms) in a furnace from your office.

Managing Sterilization of Pharmaceuticals and Foodstuffs (Acquisition of Sterilization/Pasteurization Data)
- Select from a variety of inputs (universal input)
- Automatically computes F0 value according to temperature.
- Computes results are recorded together with temperature and other parameters (pharmaceutical/foodstuff temperature, pressure, etc.).
- Measurement ON/OFF through external contact input (R1 option).

Display and Recording of Data from Environmental Testing Equipment (Acquisition of Test data from a Thermostatic Chamber)
- Measures environmental testing data, and displays and records a variety of data in an easy-to-understand format.
- Display and Recording Data from Environmental Testing Equipment (Acquisition of Test data from a Thermostatic Chamber).

Equipment Maintenance in a Power Plant (Acquisition of Data on Turbine Temperature and Vibration)
- Measures temperature and vibration of the turbine for rapid identification of abnormalities.
- Equipment Maintenance in a Power Plant (Acquisition of Data on Turbine Temperature and Vibration).

Supports our customers' site monitoring needs.
Offers optimal solutions and a user-friendly operating environment.
Offers optimal solutions and a user-friendly operating environment. Supports our customers' site monitoring needs.

**Variety of Applications and Uses**

- **A Surprising**
  - Test data from a Thermostatic Chamber

- **Format**
  - Computed results are recorded together with temperature
  - Automatically computes relative humidity from dry bulb
  - Select from a variety of inputs (universal input)

- **Equipment Monitoring in real time**
  - Connect with Data Logging Software GA10 for data

- **Equipment Maintenance in a Power Plant**
  - Rapid identification of abnormalities
  - Select screens and display intervals according to on-site processes (zones) to create the optimum

- **Select**
  - Tunnel Kiln (Acquisition of Temperature)
  - Temperature Monitoring and Recording in Blower Exhaust

- **Temperature Data**
  - Multiple channels and AUTO screen switching
  - Temperature data and abnormalities.

- **Sterilization/Pasteurization Data**
  - and Foodstuffs (Acquisition of)

- **Waste Tank**
  - Display
  - Input

- **Accumulator**
  - L1
  - L2
  - S2
  - 3
  - 5
  - OFF
  - Ln-1
  - Ln

**Display**

- **Display Method**
  - µR10000: VFD (101×16 dot matrix), µR20000: VFD (181×16 dot matrix)

- **Display Types**
  - Multiple displays
  - Digital, bar, flag, DI/DO display etc. can be displayed.
  - 15 display types can be selected from approx. 80 display types.

- **Status Display**
  - Recording in progress (RECORD), Shared alarm (ALARM), Channel No. display of
  - Recording start/stop, Chart speed change, Message printout start, Manual printout,
  - SET UP List printout

- **Bar Graph Display**
  - Measurement value output and setting parameter input/output
  - Provides carrying handle and power code

- **Alarm**
  - Alarming of channel number or TAG (Dot model only), Alarm, Periodic
  - Header Printout (/BT1)
  - Remote Control(/R1)

**Specifications**

- **Power supply**
  - Rated Power Voltage: 100-240 VAC (automatically selected)
  - Voltage Range: 90-132 VAC, 180-264 VAC
  - Rated Power Frequency: 50 Hz/60 Hz (automatically selected)
  - Power Consumption

- **General Specification**
  - Ambient Temperature and Humidity
    - 0 to 50°C, 20 to 80%RH (at 5 to 40°C)

- **Memory Backup**
  - Lium battery to save settings parameters

- **Settings Protection Function**
  - Password method

- **Internal Light**
  - White LED

- **Operation Position**
  - 0° Forward: Within 30° from horizontal

**Optional Specification**

- **Alarm Output Relay (A1, A2, A3, A4*, A5)**
  - Number of output: 2, 4, 6, 12, 14

- **Ethernet Communication Interface (/C7)**
  - Following input types can be supported besides standard inputs.

- **Mathematical Function (*M1)**
  - Number of computation channel: 11 channels (pen model), 12 channels (µR10000 dot model), 24 channels (µR20000 dot model)

- **Control**
  - Cu10, Cu25 RTD Input (N1)
  - Cu10, Cu25 RTD Input
  - Cu100 and /IP100 inputs can be used together.

- **3 Legs Isolated RTD Input (N2)**
  - A, B, b legs of RTD are isolated for dot model

- **Expansion Inputs (N3)**
  - Following input types can be supported besides standard inputs.

- **Calibration Correction (ICC)**
  - Corrects the measurement value of each channel using segment linearizer approximation.

- **Remote Control*/R1**
  - Below actions can be assigned to up to 5 points

- **SD Memory Card (EM1)**
  - SD memory cards can be used as external storage media. Measured data can be saved and replayed (dot model only), and setting parameters can be saved and loaded.
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.

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