SPECIFICATIONS

STANDARD FUNCTIONS

| Function | Descriptio | n | | | | |
|----------------------------|--|--|--|--|--|--|
| Periodic printout | Prints out date (year, month, day), time(hour, minute), chart speed, channel n on the left side of chart at fixed intervals. | Prints out date (year, month, day), time(hour, minute), chart speed, channel number, measured values, scale and recording color (pen model only) on the left side of chart at fixed intervals. | | | | |
| List printout | Prints out measuring ranges of each channel, recording spans, unit, and setting | g contents of alarm values, etc. | | | | |
| Alarm printout | Prints out channel number, alarm type, on or off time and markings when an | alarm changes state. | | | | |
| Manual printout | Prints out measured results through panel keys or remote control (optional spe | ecification) | | | | |
| Setup list printout | Prints out setting contents of setup mode. | | | | | |
| Digital display | The following are displayed depending on status. Recording on (channel number for dot model) Alarms End of chart paper (when /F1 of the optional functions is included) Battery end-of-life Displays contents for settings. | | | | | |
| Analog indication | The same scales and pointers as with analog indication recorder are installed | as standard. | | | | |
| Linear scaling | Linear scaling for DC voltage ranges from a 5 mV span up to 20 V. | Available scaling range : -20000 to 20000 | | | | |
| Square-root scaling | Square-root scaling for DC voltage range from a 5 mV span up to 20 V. | 1 11 1 1 2 2 2 2000 1 00000 | | | | |
| Arbitrary setting function | Chart speed, alarm values, date and time can be easily set by key operation. | Chart speed, alarm values, date and time can be easily set by key operation. | | | | |
| Memory backup | Preserves settings with a built-in lithium battery. (Life: Approximately 10 year | Preserves settings with a built-in lithium battery. (Life: Approximately 10 years at normal temperatures) | | | | |
| Side-by-side mounting | Panel-mounted side-by-side either vertically or horizontally. | | | | | |

■ μRS1000/μRS1800 COMMON STANDARD FEATURES

Construction

Mounting:

Flush Panel Mounting (Vertical), mounting may be inclined up to 30°, rear below front (with

horizontal base)

Panel thickness: 2 to 26 mm

Material: Case: Drawn steel; Front door: Aluminum die

casting

Color: Case and front door frame: Lamp black (Mansell

0.8Y2.5/0.4

Front door: Splash and dust-proof door (Based on DIN

40050-IP 54.)

Input

Input signals: DCV ($\pm 20 \text{ mV to } \pm 20 \text{ V range}$)

TC (Thermocouple)

RTD (Resistance temperature detector) DCA (adding external shunt resistance

[10,100 and 250Ω])

Measurement range: Range codes specified at ordering

| Input type | Range code | Measurement range | Range code | Measurement range |
|--|--|---|---------------------------------|--|
| DC voltage (DC V) | 00 01 02 | -20.00 to 20.00 mV -200.0 to 200.0 mV -2.000 to 2.000 V | 03 04 | -6.000 to 6.000 V -20.00 to 20.00 V |
| DC voltage (Linear scaling) | 30 31 32 | -20.00 to 20.000 mV -200.0 to 200.0 mV -2.000 to 2.000 V | 33 34 | -6.000 to 6.000 V -20.00 to 20.00 V |
| DC voltage (Square-root scaling) | 40 41 42 | -20.00 to 20.00 mV -200.0 to 200.0 mV -2.000 to 2.000 V | 43 44 | -6.000 to 6.000 V -20.00 to 20.00 V |
| тс | 10 11 12 13 14 15 16 17 18 19 1A 1B 1C | R 0 to 176 S 0 to 176 S 0 to 176 S 0 to 176 B 0 to 182 K -200 to 137 E -200 to 100 T -200 to 140 T -200 to 40 N 0 to 130 W 0 to 231 L -200 to 40 U -200 to 40 PR20-40 0 to 190 Platinel 0 to 140 | | 32 to 3200 °F *1 32 to 3200 °F *1 32 to 3308 °F *1 -328 to 2498 °F *1 -328 to 1472 °F *1 -328 to 172 °F *1 -328 to 752 °F *1 32 to 2372 °F *2 32 to 4199 °F *3 -328 to 1652 °F *4 -328 to 752 °F *4 -328 to 752 °F *4 -328 to 752 °F -32 to 2552 °F -32 to 2552 °F |
| RTD | 20 21 22 23 24 25 26 27 28 29 | Jpt100 -200 to 55 Pt100 -200 to 60 Pt100 -200 to 60 Cu10(GE) -200 to 30 Cu10(L8N) -200 to 30 Cu10(BAILEY) -200 to 30 Cu10(BAILEY) -200 to 30 Cu10(G) -200 to 30 Cu10(G) -200 to 30 Cu10(G) -200 to 30 Cu25 -200 to 30 | 0°C 0°C 0°C 0°C 0°C | -328 to 1022 °F *5 -328 to 1112°F *5 -328 to 572°F |

R, S, B, K, E, J, T: ANSI, IEC 584, DIN IEC 584, JIS C 1602-1981
N: Nicrosil-Nisil, IEC 584, DIN IEC 584
W: W-5%Re-W-26%Re(Hoskins Mfg Co)
L: Fe-CuNi, DIN 43710, U: Cu-CuNi, DIN 43710
JP1100: JIS C 1604-1981, JIS C 1606-1989
P1100: JIS C 1604-1989, JIS C 1606-1989
IEC 751, DIN IEC 751
P150: JISC1604-1981, JISC1606-1986
α = 0.00392 @ 20°C
α = 0.00393 @ 20°C

α = 0.00393 @ 20°C

Recording

Recording Method: Pen-model: Disposable felt pens, plotter pen

Dot-printing model: 6-color wire-dot recording **Chart speed:** User selects arbitrary speed from the following

chart speed table using panel keys. Pen model (40 speeds)

(Unit: mm/h)

| | | | | | | | | 10 | , |
|------|------|------|------|------|------|------|------|-------|-------|
| 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 80 |
| 90 | 100 | 120 | 150 | 160 | 180 | 200 | 240 | 300 | 360 |
| 375 | 450 | 600 | 720 | 750 | 900 | 1200 | 1500 | 1800 | 2400 |
| 3000 | 3600 | 4500 | 4800 | 5400 | 6000 | 7200 | 9000 | 10800 | 12000 |

| | Dot-printing model (28 speeds) (Unit: mm/h) | | | | | | | | | | | |
|---|--|-----|-----|-----|-----|-----|------|------|-----|-----|--|--|
| I | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 80 | | |
| | 90 | 100 | 120 | 150 | 160 | 180 | 200 | 240 | 300 | 360 | | |
| Ī | 375 | 450 | 600 | 720 | 750 | 900 | 1200 | 1500 | | | | |

Chart feed accuracy: ±0.1% or less (for recording longer than 1000 mm, related to the grid of the chart paper)

Recording format (Digital printout)

Channel printout: Channel number with analog recording

(Dot model only)

Alarm printout: Prints out alarm on or off markings, channel

number, alarm type, and alarm on or off time (hour, minute) on the right side of chart.

Periodic printout: Prints out date (month, day) time (hour, minute),

chart speed and measured data of each channel

on the left side of chart.

Channel number

Measured value printoutScale printout: Scale marks in the 0 and 100% positions

 Color recording printout: Pen model only

• Date, time, and chart speed

List printout: Prints out a listing of range settings, alarm set-

tings, etc.

Manual printout: Provides a digital printout of measurement re-

sults through remote control (optional function)

or panel keys.

Analog recording temporarily stops.

Setup list printout: Prints out settings of setup mode.

Display

Display method: LED (7-segment, 2-digit)

Digital display: The following are displayed depending on

Recording on (channel number for dot model); Alarms; End of chart paper (when F1 of the optional functions is included),

Battery end-of-life.

Scale plate: Specified real graduation

Background ... white; Character/line/symbol

... black

Power Supply

Rated power voltage:100 to 240 V AC (automatic selection) Usable power voltage ranges: 90 to 132, 180 to 250 V AC **Rated power frequency:** 50/60 Hz (automatic selection)

Alarm

Number of alarm levels: Up to 4/channel (H/L limit)

Display: Shared alarm indicator flashes in digital dis-

play

Others

Clock: Provided with a calendar function

Clock accuracy: ±100 ppm; Does not include time lag (1 s or less) for each power source turned on or off

Memory backup: Lithium battery to preserve setup parameters,

battery is incorporated in the recorder to preserve setup parameters. Life: approximately 10 years (at room temperatures in

standárd módel)

Battery end-of-life display: In digital display One Z-fold chart paper, one 6-color ribbon (dot model) one of each color of disposable Accessories:

pens and plotter pen (pen model) time-lag fuse, two mounting brackets, one instruction manual and a quick reference manual.

Insulation resistance: Between terminals and ground: 20 M Ω or

more (at 500 V DC)

Dielectric strength: Power terminals to ground; 1500 V AC (50/

60 Hz) for one minute; Contact output terminals to ground: 1500 V AC (50/60 Hz) for one minute; Input terminals to ground: 1000 V AC (50/60 Hz) for one minute; Input terminals to input terminals: 1000 V AC (50/60 Hz) for one minute (Except RTD, as b terminals are interconnected); Remote control terminals to ground: 500 V DC for one minute

Safety Standard

Safety standard: Complies with CSA22.2 No.1010.1, EN61010-1

EMC standard: Complies with EN61326-1

Complies with AS/NZS 2064 1/2: 1997, Class A

NORMAL OPERATING CONDITIONS

90 to 132 V, 180 to 250 V AC **Power voltage: Power-supply frequency:** 50 Hz \pm 2%, 60 Hz \pm 2%

Ambient temperature: 0 to 50°C

Ambient humidity: 20 to 80% RH (at 5 to 40°C) Up to 30 backward from vertical **Mounting:**

Horizontal viewed from the front

■ REFERENCE PERFORMANCE

Measurement and recording accuracy

(Performance in reference operating conditions: 23 ± 2°C, 55 ±10% RH; Power voltage ranges: 90 to 132 V, 180 to 250 V AC; Power-supply frequency: Within 50/60 Hz ± 1% after warm-up time of 30 minutes or more and in conditions such as little vibration which do not affect operation.)

| Input | RANGE | Measurement (digital) | Recording (analog) | |
|---------------|--------|--------------------------|--------------------|--------------------|
| type | HANGE | Measurement accuracy | Maximum resolution | Recording accuracy |
| | 20 mV | ±(0.2% of rdg + 3digits) | 10 μV | |
| | 200 mV | ±(0.2% of rdg + 2digits) | 100 μV | Measurement |
| DC voltage | 2V | ±(0.1% of rdg + 2digits) | 1 mV | accuracy ± (0.3% |
| voitage | 6V | ±(0.3% of rdg + 2digits) | 1 mV | of recording span) |
| | 20V | ±(0.3% of rdg + 2digits) | 10 mV | |

| | T | Measurement (digital p | Recording (analog) | |
|---|----------------|---|--------------------|--|
| | Туре | Measurement accuracy | Maximum resolution | Recording accuracy |
| | R | ±(0.15% of rdg + 1°C) But R,S: 0 to 100°C ± 3.7°C | | - |
| | S | 100 to 300°C ± 1.5°C B: 400 to 600°C ± 2°C | | |
| | В | No guarantee under 400°C | 0.1°C | |
| | K | ±(0.15% of rdg +0.7°C) Except at -200 to -100°C, ±(0.15% or rdg + 1°C) | | |
| Thermocouple | E | ±(0.15% of rdg + 0.5°C) | 0.1°C | |
| (TC) Does not include | J | ±(0.15% of rdg + 0.5°C) But J:–200 to -100°C, ±(0.15%) | | |
| reference | T | of rdg +0.7°C) | 0.1°C | Measurement accuracy ± (0.3% of recording span) |
| junction compensation | N | ±(0.15% of rdg + 0.7°C) | | |
| accuracy | W | ±(0.15% of rdg + 1°C) | 0.1°C | |
| | L | ±(0.15% of rdg +0.5°C) But L:-200 to -100°C, ±(0.15% | 0.1°C | |
| | U | of rdg + 0.7°C) | | |
| | PR20-40 | 0 to 450°C: Not specified 450 to 750°C ±(0.9% of rdg +3.2°C) 750 to 1100°C ±(0.9% of rdg +1.3°C) 1100 to 1900°C ±(0.9% of rdg +0.4°C) | 0.1°C | |
| | Platinel | ±(0.25% of rdg +2.3°C) | | |
| | JPt100 | ±(0.15% of rdg + 0.3°C) | | |
| Resistance temperature detector (RTD) | Pt100 | ±(0.15 % 01 lug + 0.5 C) | | |
| | Pt50 | ±(0.3% of rdg + 0.6°C) | 0.1°C | |
| | Cu110 (A11) | ±(0.4% of rdg + 1.0°C) | | |
| | Cu25 | $\pm (0.3\% \text{ of rdg} + 0.8^{\circ}\text{C})$ | | |

Note: Recording span: 100 mm (μRS1000), 180 mm (μRS1800)

Measurement accuracy at scaling:

Measurement accuracy at scaling (digits) = measurement accuracy (digits) x (scaling span (digits)/ Measurement span (digits)) + 2 digits (rounded off after the decimal point) **Dead band (pen model):** Less than 0.2% of span

Maximum recording resolution (dot printing model):

Less than 0.1 mm Reference junction compensation accuracy:

Type R, S, B, W: ±1°Ć Type K, J, E, T, N, L, U: ±0.5°C

Maximum input voltage: 2 V DC or lower and TC ranges: ±10 V

DC (continuous) 6 & 20 V DC ranges: ±30

V DC (continuous)

10 $M\Omega$ or more (TC and 20, 200 mV, 2 V Input resistance:

ranges)

Approximately 1 M Ω (6 and 20 V ranges)

External input resistance: DC V, TĆ input 2 k Ω or less

RTD input10 Ω or less/wire

(to be equal for three wires)

Input bias current: 10 nA or less (approximately 100 nA on a

TC input if burnout detection selected)

Maximum common mode voltage: 250 V AC rms (50/60 Hz) **Interference between channels:** 120 dB (external input resistance: 500 Ω , when input to other channel is 30 V.)

Common mode rejection ratio: $120^{\circ} dB (50/60 Hz \pm 0.1\%, 500\Omega)$

imbalance, between negative terminal and ground)

Normal mode rejection ratio: 40 dB (50/60 Hz ±0.1%)

STANDARD FEATURES TO EACH MODEL

| Item | Details | μRS | 1000 | μRS | μ RS1800 | | |
|----------------------|------------------------------|--|---|--|--|--|--|
| iteiii | Details | Pen model | Dot-printing model | Pen model | Dot-printing model | | |
| | Number of inputs | 1 to 4 | 6 | 1 to 4 | 6, 12, 18, 24 | | |
| Input | Scan cycle time | 125 ms | 2.5s/6 points | 125 ms | 2.5s/6 points, 5s/12 points, 10s/18 & 24 points | | |
| | Effective recording span | 100 | mm | 180 | mm | | |
| | 90% step response | 1 s or less | | 1.5 s or less | | | |
| | Print cycle time | Continuous printing for each channel | 10 s/6 points (max.) | Continuous printing for each channel | | | |
| Recording & printout | Chart | Z-fold paper (to | tal length, 16 m) | Z-fold paper (total length, 20 m) | | | |
| | Recording colors | 1st pen (Red) 2nd pen (Green) 3rd pen (Blue) 4th pen (Violet) Plotter (Purple) | No. 1 (Purple) No. 2 (Red) No. 3 (Green) No. 4 (Blue) No. 5 (Brown) No. 6 (Black) | 1st pen (Red) 2nd pen (Green) 3rd pen (Blue) 4th pen (Violet) Plotter (Purple) | No. 1, 7, 13, 19 (Purple) No. 2, 8, 14, 20 (Red) No. 3, 9, 15, 21 (Green) No. 4, 10, 16, 22 (Blue) No. 5, 11, 17, 23 (Brown) No. 6, 12, 18, 24 (Black) | | |
| | External dimensions | 144(W) × 144(I | H) × 220(D)mm | 288(W) × 288(I | H) × 220(D)mm | | |
| Dimensions & weight | Weight (approximate) | 1 pen - 3.1 kg 4 pens - 3.7 kg | 3.4 kg | 1 pen - 8.7 kg 4 pens - 9.2 kg | 6 points - 8.9 kg 24 points - 9.4 kg | | |
| Power consumption | At 100 V AC (approximate) | 19 VA (4 pens) (max. 70 VA) | 14 VA (max. 50 V A) | 23 VA (4 pens) (max. 70 VA) | 14 VA (max. 70 VA) | | |

■ OPTIONAL FEATURES

Alarm relay contact output (/A1, /A2, /A3, /A4, /A5)

Relay contact rating: 250 V DC/0.1 A (resistive load); 250 V AC (50/60 Hz)/3 A

• Output format: NO-C-NC (Excitation method OR output)

* /A4, /A5 µRS1800 only

Remote control (/R1)

Enables the following signal control through contact inputs from the rear of recorders.

Type of signals

Recording start/stop

Level

Chart speed change

Level

Manual printout start

Trigger

RS-422A interface (/C3)

Provides control and setting by host computer and outputs data to host through communications.

- Synchronizing format: Start-stop asynchronous transmission
- Specifications: Conforms to EIA RS-422A standards
- Communication system: 4-wire half duplex multidrop connection (1:N(N=1 to 16))
- Communication rate: 75, 150, 300, 600, 1200, 2400, 4800, 9600 bps
- Data length: 7 or 8 bitsStop bit: 1 or 2 bits
- Parity: Odd, even or none
- Communication distance: 500 m
- Communication mode: ASCII mode for input and output control and setting ASCII or Binary mode to output measured values
- Address, communication rate, data length, stop bit and parity are set from the front pane key.

FAIL/chart-end detection/output (/F1)

Upon CPU failure or when the chart paper reaches its end, outputs relay transfer contacts from the terminal block at back. The chart-end status is also displayed on the

front panel. Relay contact rating: 250 V DC, 0.1A (resistive load); 250 V AC 50/60 Hz, 3A

Clamped input terminals (/H2)

Provides clamped input terminals instead of screw input terminals.

Non-glare glass door (/H3)

Provides non-glare glass window in the front door.

Pen offset compensation (/D1)

Eliminates the offset-in-time phase between pens.

Thermocouple burnout protection - upscale (/B1) Thermocouple burnout protection - downscale (/B2)

Open-circuiting of input causes indication to drive upscale (/B1) or downscale (/B2).

• 2 k Ω max.; normal, 10 M Ω or more; detected as open circuit.

• Detecting current: approx. 100 nA

Temperature unit change (/D2)

Using "°F" as temperature unit

24 V DC power supply (/P1)

Rated power voltage: 24 V DC

• Usable power viltage: 21.6 to 26.4 V DC

 Maximum power consumption: 50 V AC (approx.)

Digital display (/H8)

Provides digital display

■ STANDARD ACCESSORIES & SPARES

| Item | | Part N | umber | Order |
|---|------------------|------------------|------------------|---------|
| Item | | μ R S1000 | μ R S1800 | Q'ty |
| Chart paper (1 chart/un | it) | B9565AW | B9573AN | 10 unit |
| 6-color ribbon (1 pc/un | it) | B9901AX | B9906JA | 1 unit |
| | Red (1st pen) | B993 | BOBP | 1 unit |
| Disposable felt pens | Green (2nd pen) | B9930BQ | | 1 unit |
| (3 pc/unit) | Blue (3rd pen) | B993 | B9930BR | |
| | Violet (4th pen) | B993 | BOBS | 1 unit |
| Plotter pen (3 pc/unit) | Purple | B9902AR | | 1 unit |
| Panel mounting hardware (1 pc/unit) | | B990 | OOBX | 2 unit |
| Lubricating oil (for dot model only, 1 pc/unit) | | - | B9901AX | 1 unit |

AVAILABLE MODELS

■ MODEL AND SUFFIX CODES

| Model | | Suffix codes | 3 | | | Des | cription | |
|---|--|--------------|-----------------------|--|--|---|--|---|
| 436501 436502 436503 436504 436506 437501 | | | | μRS1000 1-p μRS1000 2-p μRS1000 3-p μRS1000 4-p μRS1000 6-d μRS1800 1-p | en recorde en recorde en recorde ot recorde en recorde | er er er r | | |
| 437502 437503 437504 437506 437512 437518 437524 | | | | | | | | |
| Input of 1st pen | -00 to | _44 | | Range code | _ | 1 | 1- | |
| (for pen model) | -00 10 | | | Input type | Range code | Measurement range | | Ÿ |
| | | | | DC V | 00 01 02 | -20.00 to 20.00 mV -200.0 to 200.0 mV -2.000 to 2.000 V | 03 04 | -6.000 to 6.000 V -20.00 to 20.00 V |
| | en input of or 4-pen model cessary to specify —00 to –44 | | | DC V (linear scaling) | 30 31 32 | -20.00 to 20.00 mV -200.0 to 200.0 mV -2.000 to 2.000 V | 33 34 | -6.000 to 6.000 V -20.00 to 20.00 V |
| printing model | | | | DC V (square root scaling) | 40 41 42 | -20.00 to 20.00 mV -200 0 to 200.0 mV -2.000 to 2.000 V | 43 44 | -6.000 to 6.000 V -20.00 to 20.00 V |
| 2nd pen input of 2-, 3-, or 4-pen mode (unnecessary to speci for dot-printing mode | | | | TC | 10 11 12 13 14 15 | S 0 to 1760°C 32 to | 1472°F 1A | T -200 to 400°C -328 to 752°F N 0 to 1300°C 32 to 2372°F W 0 to 2315°C 32 to 4199°C L -200 to 900°C -328 to 1652°F U -200 to 400°C -328 to 752°F PR20-40 0 to 1900°C 32 to 3452°F Platinel 0 to 1400°C 32 to 2552°F |
| 3rd pen input of 3- or recorder (unnecessar specify for dot-printir | y to | -00 to -44 | | RTD | 20 21 22 23 24 | Pt100 | 3 to 1112°F 26 3 to 1112°F 27 3 to 572°F 28 | Cu10 (WEED) -200 to 300°C -328 to 572°F Cu10 (BAILEY)-200 to 300°C -328 to 572°F Cu10 (*1) -200 to 300°C -328 to 572°F Cu10 (*2) -200 to 300°C -328 to 572°F Cu25 -200 to 300°C -328 to 572°F Cu25 -200 to 300°C -328 to 572°F |
| model) | 'g | | | | 62 | Two measurement ranges for DC | | Two measurement ranges for DC V, TC, or RTE |
| | | <u> </u> | | | 63 | Three measurement ranges for DC | V 83 | (EXCEPT CU10, 25) Three measurement ranges for DC V, TC, or RTD (EXCEPT CU10, 25) |
| 4th pen input of 4-pe | n recorde | | | Multi-range | 64 | Four measurement ranges for DC | | Four measurement ranges for DC V, TC, or RTE (EXCEPT CU10, 25) |
| (unnecessary to specify for dot-printing recorder) | | -44 | dot-printing model | 72 | Two measurement ranges for DC | | 2 measurement ranges for DCV, TC & RTD (Cu10, 25) | |
| | | | | 73 74 | Three measurement ranges for DC Four measurement ranges for DC | | 3 measurement ranges for DCV, TC & RTD (Cu10, 25) 4 measurement ranges for DCV, TC & RTD | |
| | | | | | | 1, JIS C 1606-1989 | 7 01 10 94 | (Cu10, 25) |
| Optional feature / | | / | Pt100 : JIS C | 1604-198 | 9, JIS C 1606-1989, DIN IEC 7 1, JIS C 1606-1986 | 51, IEC751 | | |
| | | | | | | | | *¹: α = 0.00392 @ 20°C *²: α = 0.00393 @ 20°C |

■ OPTIONAL SPECIFICATIONS

| Option | Option Code | Description | | | |
|--|---|--|--|--|--|
| Alarm output relay; 2 points Alarm output relay; 4 points Alarm output relay; 6 points Alarm output relay; 12 points Alarm output relay; 24 points | /A1 /A2 /A3 /A4 /A5 | Relay contact rating: 250 V AC and 3 A, or 250 V DC and 0.1 A Note: Two or more cannot be specified together. Note: /A4 and /A5 can be specified only for μRS1800. | | | |
| TC burnout protection (upscale) TC burnout protection (downscale) | /B1 /B2 | Open-circuiting of input causes indication to drive upscale. Open-circuiting of input causes indication to drive downscale. | | | |
| RS-422A communication interface | /C3 | A host computer can control and set parameters or receive the data. | | | |
| Pen offset compensation | /D1 | Eliminates the offset of time-phase (phase difference) between the pen traces in 2-, 3-, and 4-pen recorders. | | | |
| Temperature unit change | /D2 | Using °F as temperature unit | | | |
| FAIL/chart-end detection/output | /F1 | Detecting failure in the CPU or when the chart paper reaches its end, displays the detection and outputs transfer contacts. | | | |
| Clamped input terminals | /H2 | Uses clamps for input terminals. | | | |
| Non-glare glass door | /H3 | Provides specially treated non-glare glass for front door. | | | |
| Digital display | /H8 | Provides digital display | | | |
| 24 V DC power supply | /P1 | 24 V DC power supply | | | |
| Remote control | /R1 | Enables the following control functions: • recording start/stop, • chart speed change • manual printout start. | | | |
| Scale plate | /SC12 /SC13 /SC22 /SC23 /SC33 | Single scale and double marking for dot-printing recorder Single scale and triple marking for dot-printing recorder Double scale and double marking for dot-printing recorder Double scale and triple marking for dot-printing recorder Triple scale and triple marking for dot-printing recorder Note: No option code need be specified for a pen model or single scale with single marking for dot-printing recorder Note: Option code is to be selected as per the required specification. (Refer to TI 4D6B1-01E.) | | | |

ORDERING INFORMATION

- 1. Model and suffix codes
- 2. Option codes
- 3. Recording span in each channel
- 4. When 6□, 7□, 8□ or 9□ is specified for the range code of a dot recorder:

for 62, 72, 82 or 94- specify the two range codes, the recording spans and corresponding channel numbers,

for 63, 73, 83 or 94- specify the three range codes, the recording spans and corresponding channel numbers,

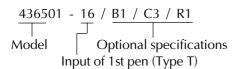
for 64, 74, 84 or 94- specify the four range codes, the recording spans and corresponding channel numbers

5. When a scaling range (range code: 30 to 34 and 40 to 44) is required, specify the scaling value (numeric value only) and unit.

In case the scaling range is required within the specified range code, $6\Box$, $7\Box$, $8\Box$, $9\Box$ also specify the scaling value(s) and unit(s) in the same way.

6. Scale and unit of the scale plate.

[Example] For Model μ RS1000 (1-pen recorder):



Possible combinations of optional features

| μ R S1000 | /A1 | /A2 | /A3 |
|-----------------------|-----|-----|-----|
| Any model without /F1 | 0 | 0 | 0 |
| with /F1 | 0 | 0 | × |

| μ R S1800 | /A1 | /A2 | /A3 | /A4 | /A5 |
|--|-----|-----|-----|--------|--------|
| Pen model without /F1 with /F1 | 00 | 00 | 00 | × | × |
| 6-dot model without /F1 with /F1 | 0 | 0 | 0 | O × | × |
| 12-, 18, and w/o /F1 24-dot, model with /F1 | 0 | 0 | 00 | 0 | 0 × |

■ OPTIONAL ACCESSORIES

| Name | Model code | Specification |
|---|------------|---------------|
| Shunt resistance (For screw input terminal block) | 415920 | 250 Ω ±0.1% |
| | 415921 | 100 Ω ±0.1% |
| | 415922 | 10 Ω ±0.1% |
| Shunt resistance (For clamped input terminal block) | 438920 | 250 Ω ±0.1% |
| | 438921 | 100 Ω ±0.1% |
| | 438922 | 10 Ω ±0.1% |

DIMENSIONS

