
U N I C O R D E R
U - 1 6 4 1

SPECIFICATION

Specifications are subject to change without notice.

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1. OVERVIEW

The Unicorder U-1641 is a pen type recorder, provided with maximum 16 channels.
The input unit is a plug-in type.

2. SPECIFICATIONS

Basic specifications

Model:	U-1641
Number of channels:	8 to 16
Operation method:	Automatic balancing system (digital servo system)
Type or input unit:	Plug-in type (2 channels for 1 unit)
Reference point:	Right end of chart paper (Left end is also possible by changing the setting.)

Recording

Recording Pens:	Felt-point pen (Recording Length approx.5km)
Effective recording width:	250 mm
Pen interval:	4 mm
Pen name:	NDL-XX
Accuracy:	±0.25% of measurement accuracy and effective recording width including linearity and dead band. For measurement accuracy, refer to the specification of input units.
Maximum pen speed:	Approx. 1600 mm/s
Synchronizer:	ON, OFF 20 data/mm
Measurement ON/OFF:	Each channel independent
Chart paper:	Roll paper No.25020P50 (50 m), No.2501P50 (20 m)
Chart speed:	10 - 2400 mm/min, /h Set in 1 mm increments
Resolution of time axis:	0.05 mm
Sampling speed:	Max. 4 ms

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Rapid chart drive: 2400 mm/min
(Reverse rotation is not allowed.)

Accuracy for chart drive: $\pm 0.1\%$ when a recording length is 1 m over.

Chart end detection: Provided.
Pens are up and chart drive ends.

Swing-out protection: Signal limiter

Paper winding-up: Equipped (option)

Superimposed marker: Operates by operation switch and external remote controller
Link with ON/OFF of synchronizer.
Amplitude: approx. 10 mm
On time: approx. 50 ms

Auto pen cap: Pen is automatically stored at the specified position when power is OFF, measurement is OFF and paper ends.

Display section

Display: 5" EL display, 320 x 256 dots

Display mode:

- (1) Range display
Simultaneous display for all channels
- (2) Digital measurement value display
6 digits (Mark, measurement data, decimal point)
Date, chart speed
- (3) Wave
- (4) AUX (optional screen)
Limiter, Chart feed trigger, Scaling(physical amount), Time, Tag name, Pen adjustment, Comment, IC card, Interface (option)

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Limit switch (output is extra-cost option)

Number of level: 2 for each channel
Type: Both upper and lower limit
Alarm: The warning buzzer sounds if it exceeds the limit value. With ON/OFF function.
Output (option): 2 contact points/ch, photo-MOS output
Max. 8 channels
Capacity of contact: 400 VDC, 0.1 A

Chart feed trigger

Remote mode: Paper is fed by turning on the remote mode.
Trend: No. of speeds: 3 (3 stages are set.)

Operation

Scaling: Range: -10000 to +10000
Decimal point and unit are set arbitrarily

RS-232C interface (extra-cost option)

Standard: Based on EIA RS-232C
Mode: Both input and output of setting value and measurement value
Speed: 1.2K, 2.4K, 4.8K, 9.6K bps

IC memory card

Function: Set value
Capacity: 256 K bytes
Mode1: JS256G3-CZ-15
Battery: 2325 series
When the battery is run out, the message "NO BATTERY" is displayed.
Battery life: 5 years or more (at 25°C, and state that the battery is removed from the mainframe. The BR-2325 is used in this case.)

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External remote controller 1

Type of signal: TTL level
Transistor switch
Contact signal

Following functions can be operated from the external devices: operation panel and OR.

Chart paper feed: Start-up and stop
Falling: start-up
Rising: stop
(Not respond to signal of 3 ms or less)

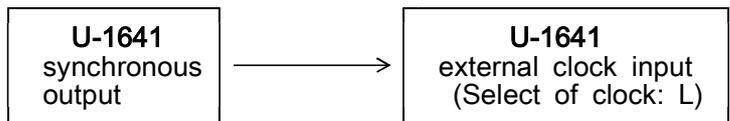
Chart paper rapid feed: Start-up and stop (feed)
L: start-up
H: stop

Select of clock for chart-paper feed: Select the external clock or internal clock.
Chart paper can be fed in synchronization with the external clock.
L: external
H: stop

External clock input: 50 μm/1 clock TTL
Max. frequency: 800 Hz
Min. pulse width: 10μs

Weight marker: Simultaneously for all channels
L: ON

Chart paper feed: Used when operating the units in parallel
Synchronous output: 1 clock/50μm TTL



Mesurement ON/OFF: Simultaneously for all channels
Falling: Measurement ON
Rising: Measurement OFF (Not respond to the signal of 5 ms or less.)

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External remote controller 2 (extra-cost option)

- EXT. Chart speed 1
- EXT. Chart speed 2

Built-in clock

- Accuracy: ±4 seconds by day
- Recording digit: NN year NN month NN day NN hour
NN minute NN second

Back-up

- Item: Each setting, built-in clock
- Battery: Two lithium batteries, built in the body
- Storing time: Approx. 1 month (at 25°C)

Operation

- Pen lift: All pens move to the pen rest when the power is turned OFF. (All pen simultaneous operation type)
- Measurement ON/OFF switch
- Measurement OFF -- Pen up -- Pen-rest (During this operation, pens other than the one that is in the measure OFF operation does not move.)
- Measurement ON -- Pen up -- Moves to recording position -- Pen down (During this operation, pens other than the one that is in the measure ON operation does not move.)

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Standard specification

Withstand voltage: Between power supply and chassis (GND):
1500 VAC, 1 minute

 Between analog input and chassis (GND):
500 VAC, 1 minute

 Between each an analog input:
500 VAC, 1 minute

Insulation resistance: Between power supply and chassis (GND):
100 Mohm or more at 500 VDC

 Between I/O control and chassis (GND):
20 Mohm or more at 250 VDC

 Between analog input and chassis (GND):
100 Mohm or more at 500 VDC

Operating environment: 5 - 40°C, 35 - 80%RH

Storage environment: -5 - 50°C, 35 - 80%RH

Vibration: 8 - 150 Hz 0.1G or less

Impact: Not allowable

Power supply: AC 90 V to AC 265 V
47 - 440 Hz
DC 9 V to DC 16 V (option)

Power consumption: Maximum

 8 pens, 240 W

 10 pens, 240 W

 12 pens, 250 W

 14 pens, 260 W

 16 pens, 270 W

 At balanced

 8 pens, 150 W

 10 pens, 155 W

 12 pens, 160 W

 14 pens, 165 W

 16 pens, 170 W

Dimensions: Approx. 438(W) x 290(H) x 520(D) mm

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Weight (including AC voltage/temperature input unit)	8 ch: 18.0 kg
	10 ch: 19.5 kg
	12 ch: 21.0 kg
	14 ch: 22.5 kg
	16 ch: 24.0 kg

Accessories:

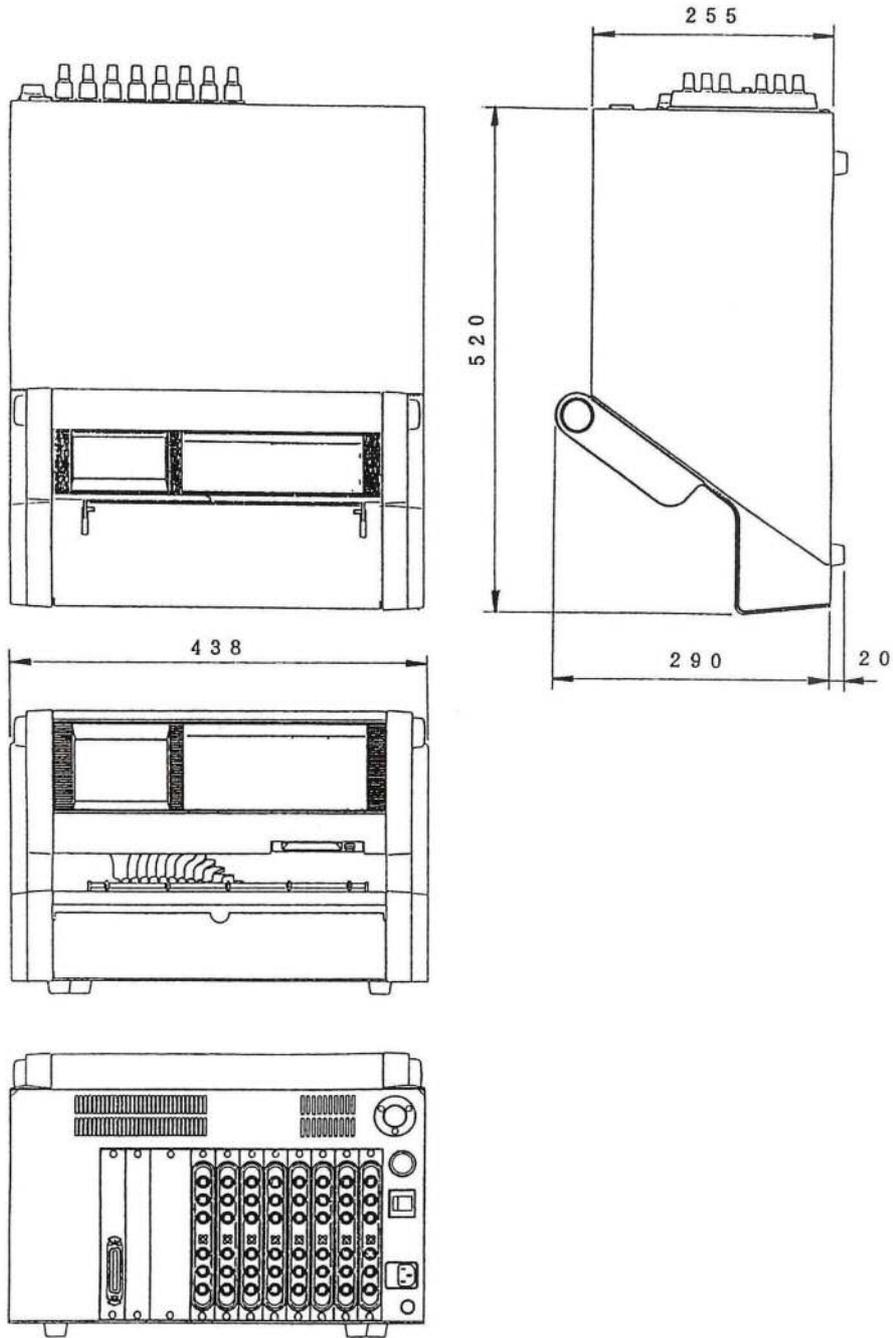
Power cable:	1
20 m chart paper #2501P50:	1
Ribbon cassette P1101:	1
IC card:	1
Pens (various colors) NDL-**:	1 each
Dust cover:	1
5A fuse (built-in type):	1
Input cover:	1
Input cover stay:	4
Dropping pipet:	1
Grounding adapter:	1
Remote connector:	1
Instruction manual:	1

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3. EXTERNAL VIEW



DC-DC power supply are option.

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