azbil

SR200 (Multi-point Type)
Hybrid Recorder

Overview

As a standard feature, in addition to recording data on chart paper, the SR200 Hybrid Recorder (6/12/24 dot printing model) has a slot for an SD card (sold separately), allowing data storage and reading and writing of settings.

This recorder also has an LCD digital display for easy reading of measured values, and provides three display modes: 1-point digital display, multi-point batch digital display, and digital display plus bar graph display.

Various settings for measurement and recording can be easily checked on the LCD digital display using the keys on the front panel.

Features

- **SD card support**
  Equipped with a standard slot for SD cards (sold separately), which can be used to store data and write or read settings.

- **Full multi-range input**
  A total of 58 input ranges is standard equipment: 10 for DC voltage, 36 for thermocouples, and 12 for resistance thermometers.
  Ranges can be freely set for each channel.

- **Easy data management using the communication function**
  The USB port enables direct connection to a PC.
  Optional RS-232C, RS-422A, RS-485, and Ethernet communication interfaces are available.
  With an Ethernet interface, e-mail notifications of alarms can be sent, and settings can be changed remotely using a Web browser.

- **Comes with a software package**
  Data editing software for use on a personal computer allows data to be processed, in addition to easy recording and management.
  Note: An optional communication interface is required.
  Analysis software enables replay and display, waveform processing, editing, and trend display from recorded data files.
  In addition, parameter setting software allows the user to manage settings from a PC.

- **Alarm display and printing functions are standard**
  Four types of alarms can be defined for each input port. When an alarm is activated, "ALM" and the measured value begin flashing on the LCD operation screen.

- **End-of-chart detection function**
  Alarm actions upon detecting the end of the chart paper can be defined.

- **A variety of calculation functions**
  Measured data can be processed according to specified calculation settings, and the results of calculation can be displayed for each channel's displayed/recorded data.

Specifications

Measurement point	Measurement point	6/12/24

	Input type	[DC voltage]
		  ±13.8 mV, ±27.6 mV, ±69.0 mV, ±200 mV, ±500 mV, ±1 V, ±5 V, ±10V, ±20 V, ±50 V
		[DC current]
		  Supported by additional shunt resistor (250 Ω)
		[Thermocouple]
		  K, E, J, T, R, S, B, N, U, L, W-WRe26, WRe5-WRe26, PtRh40-PtRh20, NiMo-Ni, CR-AuFe,
		  Platinel II, Au/Pt
		[Resistance thermometer]
		  Pt100, old Pt100, JPt100, Pt50, Pt-Co

	Measuring interval	1 sec / 6-point, 2 sec / 12-point, 2sec / 24-point
	Input resolution	Approx. 1/40000 minimum (converted into reference range)
	Input resistance	Thermocouple/DC voltage (±5 V or lower range): 6 MΩ or higher DC voltage (±10 V or higher range): Approx. 1 MΩ
	Burnout	None/UP/DOWN selected for each input CH for thermocouple, resistance thermometer and DC voltage (±500 mV or lower range). These cannot be selected with DC voltage (±1 V or higher range). Maximum time to burnout detection is three times as long as measuring interval.

	Allowable signal source resistance	[Thermocouple/DC voltage]
		  Burnout disabled: 1 k Ω or lower
		  Burnout enabled: 100 Ω or lower
		[Resistance thermometer]
		  10 Ω or lower per wire, the same resistance for 3 wires

	Maximum input voltage	Thermocouple/DC voltage (±5 V or lower range): ±10 V or lower DC voltage (±10 V or higher range): ±60 V or lower Resistance thermometer: ±6 V or lower
	Measuring current	Resistance thermometer: 1 mA ±20%
	Maximum common mode voltage	30 Vac/60 Vdc
	Common mode rejection ratio	130 dB or more (50/60 Hz)
	Series mode rejection ratio	50 dB or more (50/60 Hz)
	Terminal board	Detachable
	Accuracy rating	Refer to the tables of measuring range, rated accuracy and display resolution.
	Reference junction compensation accuracy	Refer to the table of reference junction compensation accuracy.
	Temperature drift	±0.01 %FS/°C Converted into reference electromotive force.
Recording specifications	Recording system	Wire-dot type 6-color ribbon (trace printing and digital recording/printing)
	Recording color	(see tables below)

Trace printing (default colors)

CH	1,7 13,19	2,8 14,20	3,9 15,21	4,10 16,22	5,11 17,23	6,12 18,24
Color	Red	Black	Blue	Green	Brown	Purple

Digital recording/printing

Periodic data printing	Six colors (red, black, blue, green, brown and purple) repeated
Data printing	Six colors (red, black, blue, green, brown and purple) repeated
Subtract printing	ame as trace printing CH
Printing at power-on	Six colors (red, black, blue, green, brown and purple) repeated
Printing at recording start	Six colors (red, black, blue, green, brown and purple) repeated
Alarm printing	Red (activated), green (reset)
List printing	Black, but CH-specific items use the same color as trace printing CH
Message printing	Arbitrary color
Calendar timer printing	Brown
CH No. printing	Same as trace printing CH
CH No. printing	Black
Operation recording	Arbitrary color

Recording interval	Normal: Approx. 5 sec/point, Fast: Approx. 2.5 sec/point Synchro: Linked to chart speed

| Recording specifications	Chart	Fan-fold type (total width 200 mm, total length 20 m, recordable width 180 mm)
	Recording/ printing colors	For trace printing, six colors can be arbitrarily assigned. For the default colors, see the trace printing color table on page 2.
	Recording deadband	0.2 %
	Chart speed	1 to 1500 mm/h, in 1 mm/h increments 12.5 mm/h can be set exceptionally.
	Chart fast-feed	Operated by FEED key Feed 0.1 mm by one quick press of the key or feed continuously (approx. 600 mm/min) by holding down the key.
	Display/recording ON/OFF	Select ON/OFF for trace printing to chart, digital printing to chart and recording to SD card for each CH.
	Subtract printing	Difference between reference CH value and measured value or between set value and measured value is printed.
	Zone printing	2/3/4 divisions
	Compressed/ expanded printing	Chart recording lower/upper limit is made non-linear, and specific chart recording lower/upper limit is shrunk or expanded.
	Automatic range-shift	Recording range is shifted automatically to another set range when measured value exceeds the current range. Overlap function available

	Periodic data printing	Digital printing is added to trace printing at
		(1) arbitrary intervals or (2) specified time. Printed items: Time, CH No., data and unit
		    (1) Set interval and start time. Interval is limited by chart speed.
		    (2) Set time for printing (24 points maximum)

	Data printing	Digital printing is performed when required, interrupting trace printing. Printed items: Time, CH No., data and unit Consecutive requests are limited to a certain number.
	Fixed time printing	Date, time and time line, scale (ZERO/SPAN), CH No. & tag, and unit can be printed in conjunction with the chart speed. Year/month/date is printed instead of month/date when printed at every midnight. Tag is printed at the set time only.
	Printing at power-on	Date and time are printed at power-on.
	Printing at recording start	Date and time are printed at recording start (recording OFF → ON).
	Alarm printing	Alarm activation time, CH No., alarm type and level are printed at alarm activation. Reset time, CH No., hyphen and alarm level are printed at alarm reset. Up to 48 data can be memorized.

	List printing	List printing is performed when required, interrupting trace printing.
		(1) "List 1": Major setting information
		      Date, time, CH setting, recording setting and alarm setting
		(2) "List 2": Additional setting information
		      Date, time, additional setting and optional setting
		(3) "List 3": List 1 + List 2
		      Date, time, List 1 + List 2
		(4) Others Printing can be stopped.
		      Consecutive requests are limited to a certain number.

	Message printing	Printing is performed when required.
		Trace printing can be continued/interrupted.
		Linking to alarm activation/reset possible.
		  One message consists of up to 15 characters (alphabets, numbers, katakana, symbols, etc.).
		  Up to 20 types can be registered.
		  Consecutive requests are limited to a certain number.

	Calendar timer printing	Printing is performed with calendar timer ON and printing enabled. Trace printing is continued. Printed items: Date, time, calendar timer No. and message One message consists of up to 15 characters (alphabets, numbers, katakana, symbols, etc.), shared by message printing
	Channel number printing	Channel number is printed in conjunction with the chart speed.
	Setting change mark	Δ is printed on the right side of chart when setting change occurs.
	Operation recording	Remote contact ON/OFF status is recorded with straight line to specified area. Specified area: Within the range of 0 to 90 % Up to 20 types can be recorded. * Only for the unit using remote contact and enabling operation recording.
	Chart illumination	White LED ON/OFF/AUTO (turn OFF after 3-minute unused period)
	Chart end detection	Notified on the operation window. Automatic recording stop (the rest operated normally)

Indication/ display specifications	Digital display	Full dot monochrome LCD 264 x 48 dots Display area 184 x 22 mm White LED backlight (turned off after 3-minute unused period when selecting AUTO) Channel number: 2 digits Data display: 5 digits (+/- and decimal point excluded)	
	Analog indication	180 mm LCD bar graph	
	Analog indication deadband	Undefined (no analog indication)	

	Status LED	(1) REC: Green LED
		    OFF: Recording stopped
		    Flash: Data printing, list printing and message printing in progress
		(2) CARD: Green LED
		    OFF: No card inserted
		    Flash: Card being accessed
		    ON: Card inserted
		(3) ALM: Red LED
		    OFF: All alarm OFF
		    Flash: Any alarm ON	

	Operation/set keys	FUNC1: Function switch 1 FUNC2: Function switch 2 ENTER: Register settings MENU: Display settings ESC: Cancel settings ▲ : Forward ▼ : Reverse ◀ : Move left ▶ : Move right REC: Recording start/stop FEED: Chart fast feed DATAP: Data print	
	Front engineering port	Mini-USB port	
Calculate specification	Calculation types	None, Root (square root), LOGe (natural logarithm), LOG10 (common logarithm), INT (integration), Humidity, COM.Input (data communications input), MUL (arithmetic 1), DIV (arithmetic 2), High-Peak (max value), Low-Peak (min value), Average, Power (exponent), Formula, BrokenLine (broken line approximation)	
	Formula	Calculate	Four arithmetic operations, Comparison operation, Logical operation, General calculation functions
		Function	Integration, 24-hour integration, F value, Relative humidity, Dew-point temp, Moving average, First-order lag filter, Increment per unit time
General specifications	Rated power voltage	100 to 240 Vac 50/60 Hz	
	Power consumption	MAX 65 VA 100 Vac balanced: 22 VA 240 Vac balanced: 31 VA * Balanced: Only recording. Alarm and communication are notoperated	
	Memory protection	Set contents maintained by nonvolatile RAM. Clock data maintained by lithium battery. (Data saved for more than 10 years with 8-hour or more operation per day.) (Alarm message displayed when battery level drops.)	
	Clock accuracy	±2 minutes in 30 days (under reference operating condition, error caused by power ON/OFF excluded)	
	Insulation resistance	Primary terminal – protective conductor terminal: 1500 Vac (1 min) Secondary terminal – protective conductor terminal: 500 Vac (1 min) Primary terminal – secondary terminal: 1500 Vac (1 min) * Primary terminal: General power terminal (100 to 240 V), alarm output terminal of mechanical relay "a" and mechanical relay "c" Secondary terminal: All terminals other than primary and protective conductor terminals	

	Exterior material	[Front]
		  Door: Aluminum die-casting (ADC12)
		  Glass: Soda glass
		[Rear]
		  Case: Cold-rolled steel plate (SPCC)	

	Exterior color	[Front]
		  Door: Black (equivalent of Munsell N3.0)
		  Glass: Clear and colorless
		[Rear]
		  Case: Gray (equivalent of Munsell N7.0)	

General specifications	Normal operating condition	Ambient emperature	0 to 50 °C (20 to 65 %RH, non-condensing)
		Ambient humidity	20 to 80 %RH, non-condensing (5 to 45 °C)
		Power voltage	100 to 240 Vac ±10 %
		Power frequency	50/60 Hz ±2 %
		Mounting posture	Forward tilt 0°, backward tilt 0 to 30°, left and right 0 to 10°
	Terminal screw	Power terminal: M4.0 Protective conductor terminal: M4.0 Measuring input terminal: M3.5 Alarm output terminal: M3.5 Remote contact terminal: M3.5 Communications terminal: M3.0	
	Weight	Approx. 7.8 kg (with full options)	
	Mounting type	Panel mounting Mounting brackets attached to the top and bottom sides	
	Marking	CE marking EN61326-1, EN61010-1	
Option	External Operation	Using remote contact signal (no-voltage contact: short or open), selection of chart speed or data printing can be executed without operating keys at the operation/set keys section.	
		Input points	5, 10, 20
		Input type	Non-voltage contact or open collector
		Outside point of contact capacity	5 Vdc / 2 mA
		Functions	(1) Recording start/stop
			(2) Select chart speed from three speeds
			(3) Data printing
			(4) List printing
			(5) Message printing
			(6) Periodic (Date Interval) data printing
			(7) Integration value reset
			(8) SD card recording data-saving
			(9) Integration value reset
			(10) Time correction

	Alarm output	Mechanical relay output
		Common to 'a' contact · · · 2, 6, 12, 24
		                    Max load 100 to 240 Vac 2 A
		                                  30 Vdc 2 A
		            Minimum load 100 mVdc 100 µA
		Mechanical relay output
		Common to 'c' contact · · · 4, 8, 16
		                    Max load 100 to 240 Vac 2 A
		                                  30 Vdc 2 A
		            Minimum load 100 mVdc 100 µA	

	communication interface	RS-232C, RS-422A, RS-485, Ethernet	
	Communication protocol	MODBUS (ASCII/RTU), MODBUS/TCP	

Accessories	Item	Remarks	Q'ty
	CD-ROM (Instruction manual, various application)	**SR-911DC0000**	1
	Instruction manual [Wiring/Installation]	-	1
	Bracket	**81446641-001**	2 (1 set)
	Terminal screw	-	5
	Folding chart (100 divisions)	**81407861-001**	1
	Ribbon cassette	**SR-922RC0000**	1

Example of recording

● Periodic data printing

Record the data with time, scale, chart speed, setting change mark and time line over trace printing by arbitrary interval.

Time — Digital recording — Trace printing
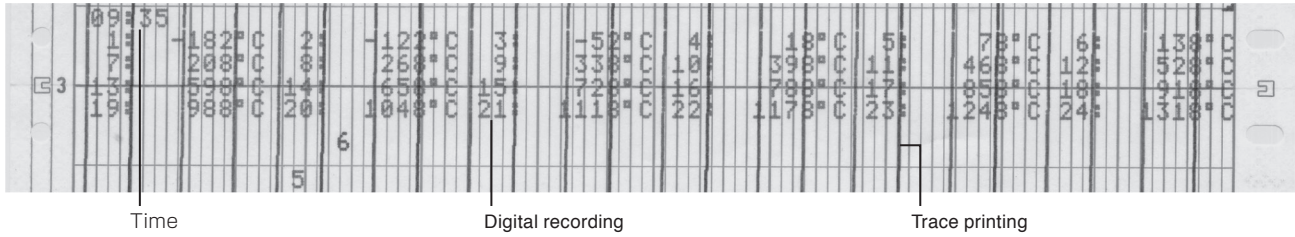
● Data print

When the latest data is required, trace printing will stop and recorded.

Time — Digital recording — Trace printing
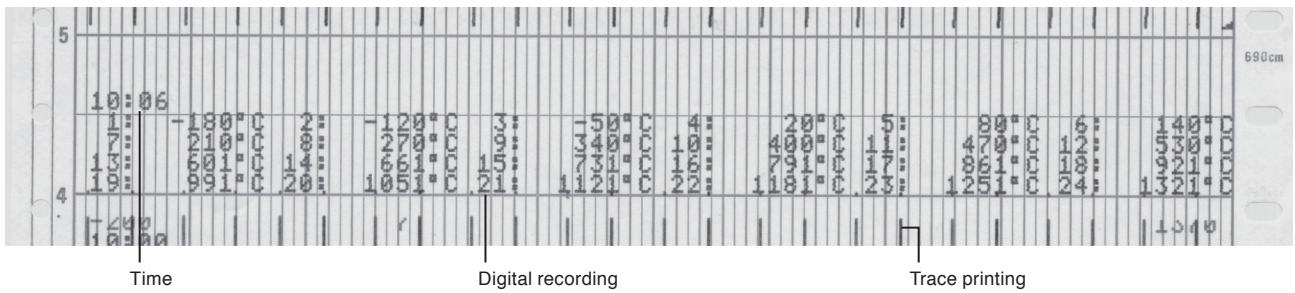
● Alarm activation and reset printing

When alarm is activates/reset, print time, channel No. alarm type, and alarm No.

Level (alarm point No.)

Alarm reset time — Alarm reset channel No.

14:42 24-3

50mm/H   14:31 24H3

Alarm activation time — Alarm activation channel No. — Alarm type — Level (alarm point No.)
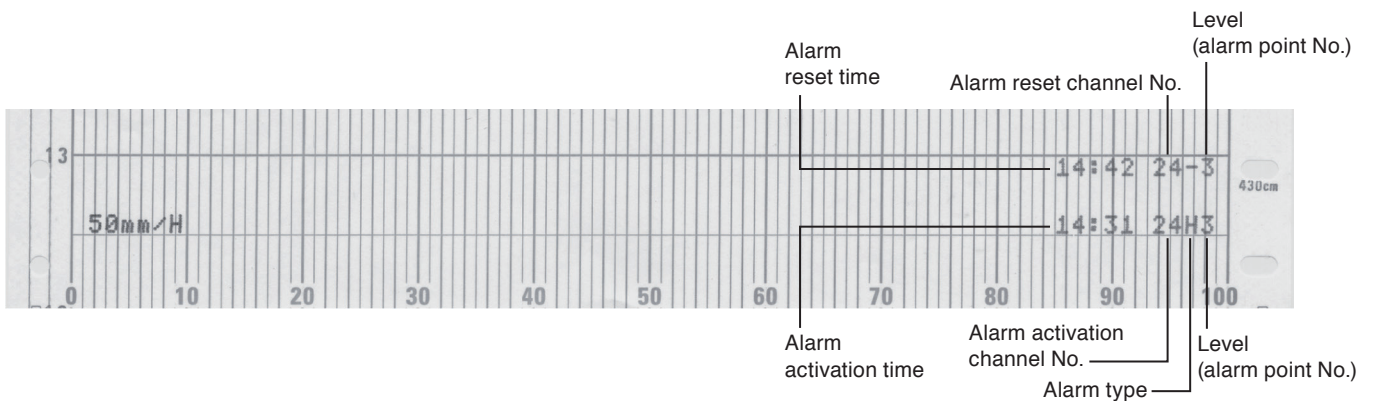
Table : Measuring range, rated accuracy and display resolution

Input type		Measuring range	Reference range	Rated accuracy	Display resolution
DC voltage	DC (mV)	-13.80 to +13.80 mV	±13.8 mV	±0.1 %FS ±1 digit	10 µV
		-27.60 to +27.60 mV	±27.6 mV		10 µV
		-69.00 to +69.00 mV	±69.0 mV		10 µV
		-200.0 to +200.0 mV	±200 mV		100 µV
		-500.0 to +500.0 mV	±500 mV		100 µV
	DC (V)	-1.00 to +1.00 V	±1 V		10 mV
		-5.00 to +5.00 V	±5 V		10 mV
		-10.00 to +10.00 V	±10 V		10 mV
		-20.00 to +20.00 V	±20 V		10 mV
		-50.00 to +50.00 V	±50 V		10 mV
Thermocouple	K	-200.00 to +300.00 °C	±13.8 mV	±0.1 %FS ±1 digit	0.1 °C
		-200.0 to +600.0 °C	±27.6 mV		0.1 °C
		-200 to +1370 °C	±69.0 mV		1 °C
	E	-200.0 to +200.0 °C	±13.8 mV		0.1 °C
		-200.0 to +350.0 °C	±27.6 mV		0.1 °C
		-200 to +900 °C	±69.0 mV		1 °C
	J	-200.0 to +250.0 °C	±13.8 mV		0.1 °C
		-200.0 to +500.0 °C	±27.6 mV		0.1 °C
		-200 to +1200 °C	±69.0 mV		1 °C
	T	-200.0 to +250.0 °C	±13.8 mV		0.1 °C
		-200.0 to +400.0 °C	±27.6 mV		0.1 °C
	R	0 to 1200 °C	±13.8 mV		1 °C
		0 to 1760 °C	±27.6 mV		1 °C
	S	0 to 1300 °C	±13.8 mV		1 °C
		0 to 1760 °C	±27.6 mV		1 °C
	B	0 to 1820 °C	±13.8 mV		1 °C
	N	-200 to +400 °C	±13.8 mV		0.1 °C
		-200 to +750 °C	±27.6 mV		0.1 °C
		-200 to +1300 °C	±69.0 mV		1 °C
	U	-200.0 to +250.0 °C	±13.8 mV		0.1 °C
		-200.0 to +500.0 °C	±27.6 mV		0.1 °C
		-200.0 to +600.0 °C	±69.0 mV		0.1 °C
	L	-200.0 to +250.0 °C	±13.8 mV		0.1 °C
		-200.0 to +500.0 °C	±27.6 mV		0.1 °C
		-200 to +900 °C	±69.0 mV		1 °C
	W-WRe26	0 to 2315 °C	±69.0 mV	±0.15 %FS ±1 digit	1 °C
	WRe5-WRe26	0 to 2315 °C	±69.0 mV		1 °C
	NiMo-Ni	0.0 to 290.0 °C	±13.8 mV	±0.2 %FS ±1 digit	0.1 °C
		0.0 to 600.0 °C	±27.6 mV		0.1 °C
		0 to 1310 °C	±69.0 mV		1 °C
	PlatineIII	0.0 to 350.0 °C	±13.8 mV	±0.15 %FS ±1 digit	0.1 °C
		0.0 to 650.0 °C	±27.6 mV		0.1 °C
		0 to 1390 °C	±69.0 mV		1 °C
	PtRh40-PtRh20	0 to 1880 °C	±13.8 mV	±0.2 %FS ±1 digit	1 °C
	CR-AuFe	0.0 to 280.0 K	±6.9 mV		0.1 K
	Au/Pt	0.0 to 1000.0 °C	±27.6 mV		0.1 °C
Resistance thermometer	Pt100	-140.0 to +150.0 °C	160 Ω	±0.1 %FS ±1 digit	0.1 °C
		-200.0 to +300.0 °C	220 Ω		0.1 °C
		-200.0 to +649.0 °C	340 Ω		0.1 °C
		-200.0 to +850.0 °C	400 Ω		0.1 °C
	Old Pt100	-140.0 to +150.0 °C	160 Ω		0.1 °C
		-200.0 to +300.0 °C	220 Ω		0.1 °C
		-200.0 to +649.0 °C	340 Ω		0.1 °C
	JPt100	-140.0 to +150.0 °C	160 Ω		0.1 °C
		-200.0 to +300.0 °C	220 Ω		0.1 °C
		-200.0 to +649.0 °C	340 Ω		0.1 °C
	Pt50	-200.0 to +649.0 °C	220 Ω		0.1 °C
	Pt-Co	4.0 to 374.0 K	220 Ω	±0.15 %FS ± 1 digit	0.1 K

* Measuring range conversion accuracy under reference operating condition. Reference junction compensation accuracy is added for thermocouple input.
K, E, J, T, R, S, B, N:IEC584 (1977, 1982), JIS C 1602-1995, JIS C 1605-1995
W-WRe26, NiMo-Ni, PlatineII, PtRh40-PtRh20, CR-AuFe, Au/Pt:ASTM E1751   WRe5-WRe26:ASTM E988
U, L:DIN43710-1985   Pt100:IEC751 (1995), JIS C 1604-1997   Old Pt100:IEC751 (1983), JIS C 1604-1989, JIS C 1606-1989
JPt100:JIS C 1604-1981, JIS C 1606-1986   Pt50:JIS C 1604-1981   Pt-Co:CHINO

■ Escape clause of the precision rating

Input type	Escape clause range	Rated accuracy
K, E, J, N, U, L	-200 to 0 °C	±0.2 %FS ± 1 digit or equivalent of 70 μV, whichever is large
T	-200 to 0 °C	±0.2 % FS±1 digit
R, S	0 to 400 °C	±0.2 %FS ±1 digit
B	0 to 400 °C	None
	400 to 800 °C	±0.2 %FS ±1 digit
W-WRe26	0 to 400 °C	±0.3 %FS ±1 digit
PtRh40-PtRh20	0 to 400 °C	±1.5 %FS ±1 digit
	400 to 800 °C	±0.8 % FS±1 digit
CR-AuFe	0 to 20 K	±0.5 % FS±1 digit
	20 to 50 K	±0.3 %FS ±1 digit
Pt-Co	4 to 20 K	±0.5 %FS ±1 digit
	20 to 50 K	±0.3 %FS ±1 digit

Model selection

| I | II | III | IV | V | VI | VII | | Ex. SR-206AN00NNN |

I	II	III	IV	V	VI	VII	Discriptions
Model	**Input point**	**Power**	**Communi-cations**	**Alarm output + remote contacts**	**Addition**	**Design code**	
SR-2							180 mm chart recorder
	06						6 points
	12						12 points
	24						24 points
		A					100 to 240 Vac
			N				None
			E				Ethernet
			R				RS-232C
			A				RS-422A/RS-485
			Q				RS-232C+RS-485
			C				RS-422A/RS-485+RS-485
			G				Ethernet + RS-422A/RS-485 + RS-485
				0			None
				2			2 mechanical relay 'a' contact alarm outputs
				4			4 mechanical relay 'c' contact alarm outputs + 5 remote contacts
				A			6 mechanical relay 'a' contact alarm outputs + 5 remote contacts
				8			8 mechanical relay 'c' contact alarm outputs + 10 remote contacts
				B			12 mechanical relay 'a' contact alarm outputs + 10 remote contacts
				F			16 mechanical relay 'c' contact alarm outputs + 20 remote contacts
				D			24 mechanical relay 'a' contact alarm outputs + 20 remote contacts
				*1	**0**		None
					D		With inspection results
					Y		With traceability certification
						NNN	None

*1 Additionally, tropicalization and anti-sulfidation treatments can be ordered.
   However, there are some specifications restrictions. For details, contact the azbil Group.

Consumables

• About attached chart paper

Item	Item number	Remarks	Printed sca
Folding chart 100 divisions	81407861-001	10 books 16 m	0, 20, 40, 60, 80, 100
Folding chart 100 divisions (20% Recycling paper)	81425049-001	10 books 16 m	0, 10, 20, 30, 40, 50 0, 20, 40, 60, 80, 100 0, 50, 100, 120, 160, 200 The above 3 paterns are printed.
Folding chart 120 divisions (20% Recycling paper)	81425049-002	10 books 16 m	0, 10, 20, 30, 40, 50,60 0, 200, 400, 600, 800, 1000, 1200 The above 2 paterns are printed.
Folding chart 60 divisions (20% Recycling paper)	81425049-003	10 books 16 m	0, 2, 4, 6, 8, 10, 12, 14 0, 10, 20, 30, 40, 50, 60, 70 The above 2 paterns are printed.
Folding chart 80 divisions (20% Recycling paper)	81425049-004	10 books 16 m	0, 20, 40, 60, 80 0, 100, 200, 300, 400 0, 400, 800, 1200, 1600 The above 3 paterns are printed.
Folding chart 150 divisions (20% Recycling paper)	81425049-005	10 books 16 m	0, 50, 100, 150
Clean paper chart 100 divisions	81407937-001	10 books 12 m	0, 20, 40, 60, 80, 100

* The chart paper has the same printed linear scale as the standard scale.
  Therefore, it can be shared in regardless of input types (thermocouple, resistance thermometer, or others).

• Ribbon cassette

Item	Item number	Quantity	Remark
Ribbon cassette	SR-922RC0000	1	

• 250 Ω resistor

Item	Item number	Quantity	Remark
250 Ω resistor (accuracy ±0.02 %)	81401325	1 resistors	
250 Ω resistor (accuracy ±0.05 %)	81446642-001	2 resistors	

• SD card

Item	Item number	Quantity	Remark
SD card (512 MB)	SR-911SD0512	1	
SD card (1 GB)	SR-911SD1000	1	
SD card (2 GB)	SR-911SD2000	1	

• Tag plate

Item	Item number	Quantity	Remark
Tag plate (for 6points type)	SR-922TP0000	1	
Tag plate (for 12points type)	SR-922TP0001	1	
Tag plate (for 24points type)	SR-922TP0002	1	

External dimensions

(Unit: mm)

216 When alarm output/remote contacts unit
and communication unit are added

288

288

297.6

277.6

88.8

38

154.4

26.5

195

Mounting

(Unit: mm)

● **Minimum interval on multiple units mounting**

$281 \, ^{+1}_{0}$

$281 \, ^{+1}_{0}$

360

360
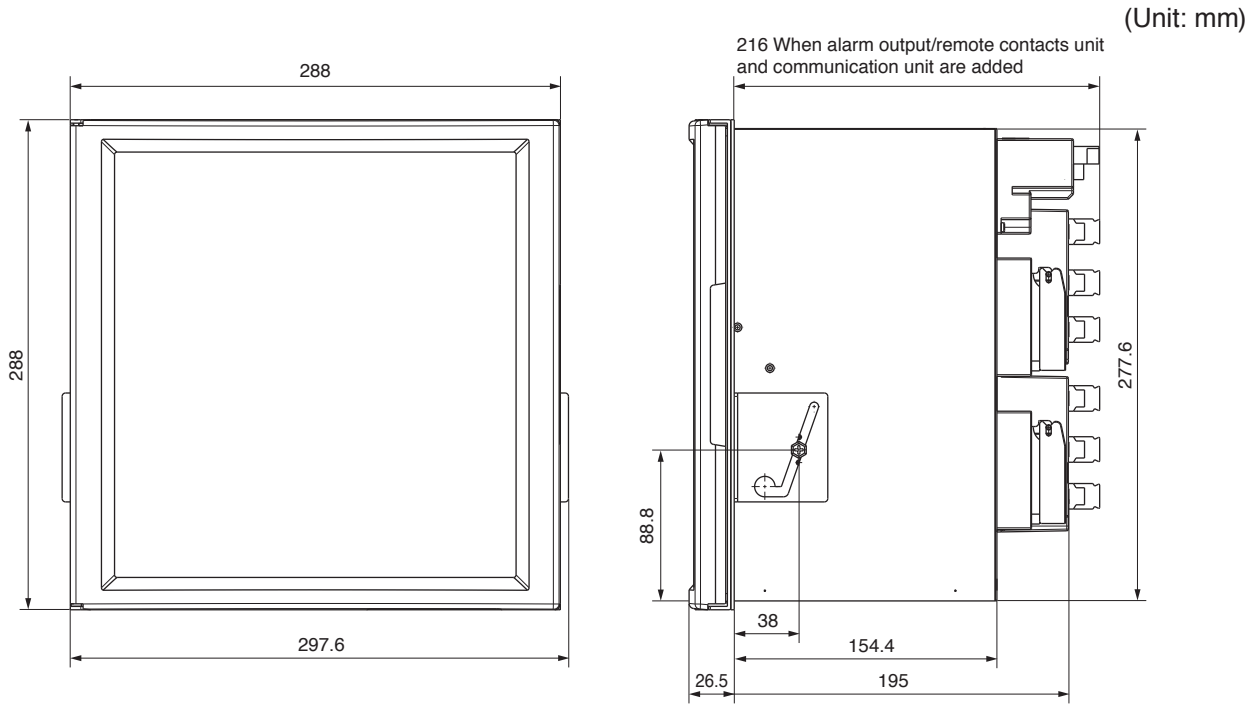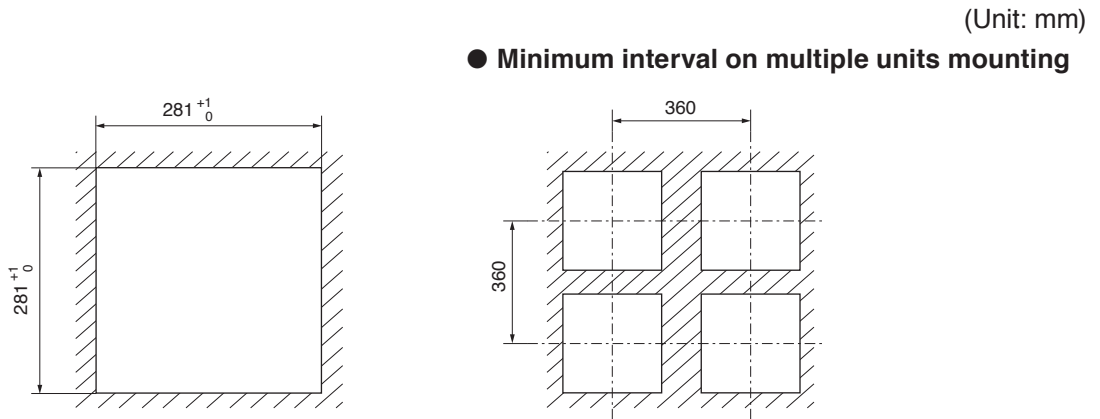
Panel mounting method

(1) Insert the unit into the panel cutout from the front of the panel.

(2) Screw lightly two provided mounting screws into the screw holes on left/right side (two locations in total) of the recorder.

(3) Insert the hexagon heads of screws installed above into the round holes of brackets, (from the front) sliding them as shown in the figure, press it firmly against the panel, and tighten them with the provided wrench or a Phillips-head screwdriver. In addition, the tightening torque of the screw is 2 Nm (for use of a Phillips-head screwdriver).

* Note that the left bracket differs from the right one (Mounting must be performed by two persons).

Panel

Slide
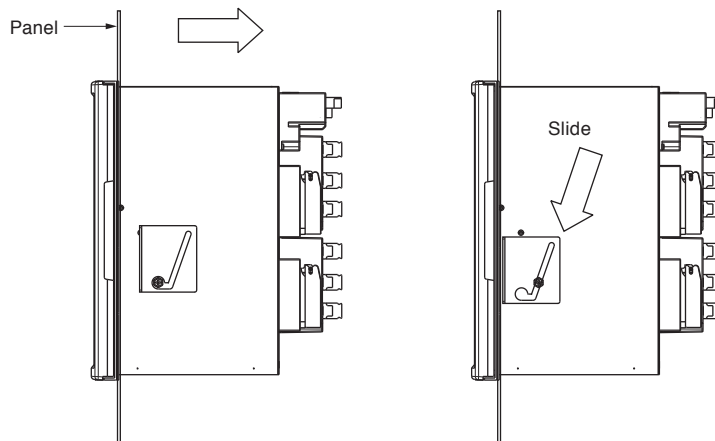
Wiring

■ **The figure below is the diagram of the terminal board with the option [Alarm relay output (24 points 'a' contact) + remote contacts (20 points) and communication interface].**

Communications terminal (option) * RS-232C and RS-422/485 for COM1 are specified on purchase.

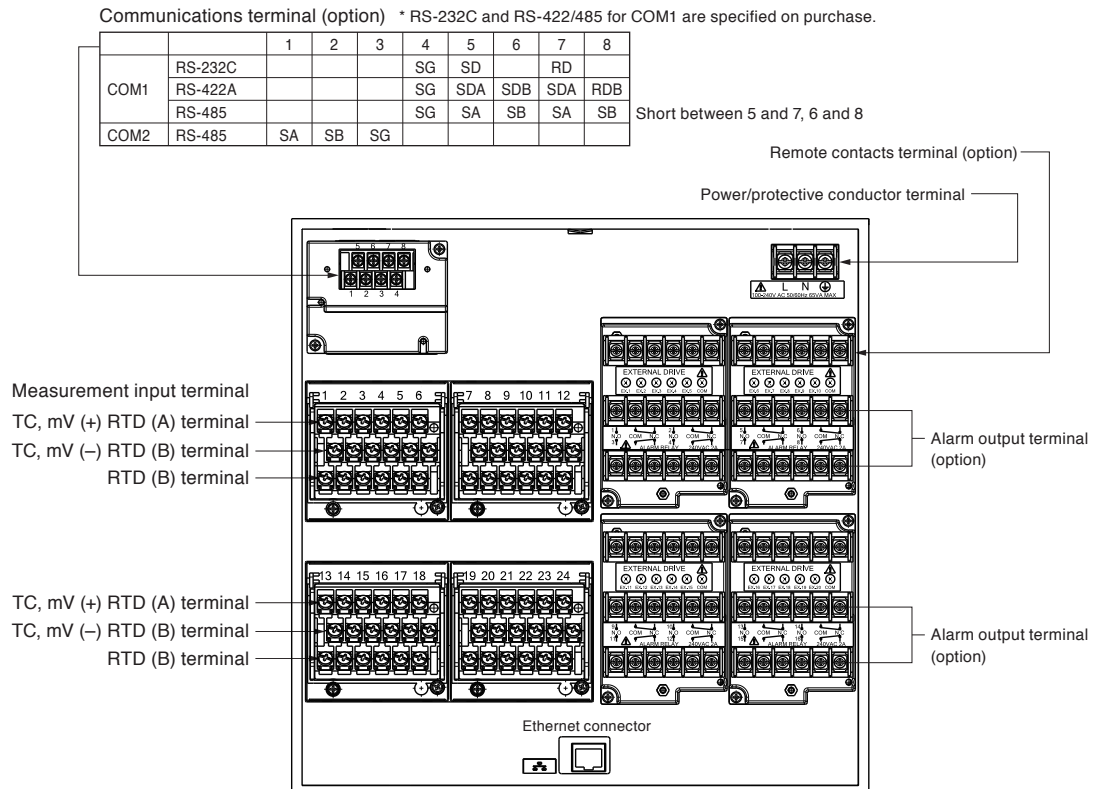|		1	2	3	4	5	6	7	8
COM1	RS-232C				SG	SD		RD	
	RS-422A				SG	SDA	SDB	SDA	RDB
	RS-485				SG	SA	SB	SA	SB
COM2	RS-485	SA	SB	SG					

Short between 5 and 7, 6 and 8

Remote contacts terminal (option)

Power/protective conductor terminal

Measurement input terminal
TC, mV (+) RTD (A) terminal
TC, mV (–) RTD (B) terminal
RTD (B) terminal

Alarm output terminal (option)
N.O terminal
COM terminal

TC, mV (+) RTD (A) terminal
TC, mV (–) RTD (B) terminal
RTD (B) terminal

N.O terminal
COM terminal

Ethernet connector

■ **The figure below is the diagram of the terminal board with the option [Alarm relay output (16 points 'c' contact) + remote contacts (20 points) and communication interface].**

Communications terminal (option) * RS-232C and RS-422/485 for COM1 are specified on purchase.

		1	2	3	4	5	6	7	8
COM1	RS-232C				SG	SD		RD	
	RS-422A				SG	SDA	SDB	SDA	RDB
	RS-485				SG	SA	SB	SA	SB
COM2	RS-485	SA	SB	SG					

Short between 5 and 7, 6 and 8

Remote contacts terminal (option)

Power/protective conductor terminal

Measurement input terminal
TC, mV (+) RTD (A) terminal
TC, mV (–) RTD (B) terminal
RTD (B) terminal

Alarm output terminal (option)

TC, mV (+) RTD (A) terminal
TC, mV (–) RTD (B) terminal
RTD (B) terminal

Alarm output terminal (option)

Ethernet connector

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