azbil

SR100 (Multi-point Type)
Hybrid Recorder

Overview

The SR100 Hybrid Recorder is a 6-point recorder with an LCD digital display for easy reading of measured values.

This recorder has three modes for displaying measured values: 1-point digital display, multi-point batch digital display, and digital display + 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 RS232C, RS422A, RS485, 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.
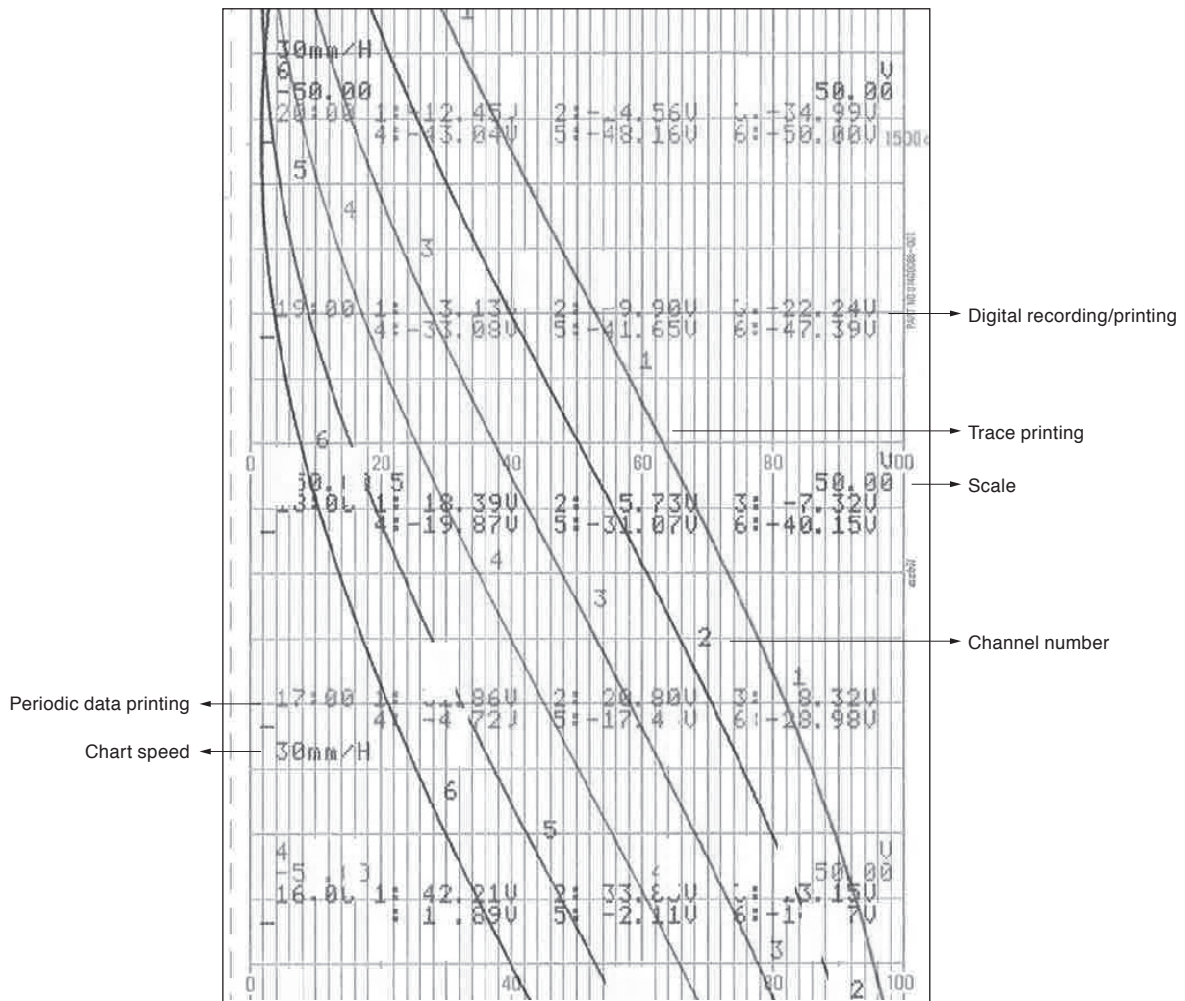
Specifications

Measurement point	**Measurement point**	6

	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 (100 Ω, 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
	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	Trace printing (default colors)

Trace printing (default colors)

CH	1	2	3	4	5	6
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 114 mm, total length 10 m, recordable width 100 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 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 5 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 240 x 48 dots Display area 106 x 16 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	100 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 40 VA 100 Vac balanced: 20 VA, 240 Vac balanced: 27 VA	
	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: 20 MΩ or more (500 Vdc) Secondary terminal – protective conductor terminal: 20 MΩ or more (500 Vdc) Primary terminal – secondary terminal: 20 MΩ or more (500 Vdc) * 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)	

	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°

General specifications	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. 3.0 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		
		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 or 6 　　　　　　 Max load 　　100 to 240 Vac 0.2 A 　　　　　　　　　　　　 30 Vdc 0.2 A 　　　　　　 Minimum load 5 Vdc 10 mA Mechanical relay output Common to 'c' contact · · · 4 　　　　　　 Max load 　　100 to 240 Vac 0.2 A 　　　　　　　　　　　　 30 Vdc 0.2 A 　　　　　　 Minimum load 5 Vdc 10 mA			
	communication interface	RS232C, RS422A, RS485, Ethernet			
	Communication protocol	MODBUS (ASCII/RTU), MODBUS/TCP			
Accessories		Item	Remarks		Q'ty
		Instruction manual	-		1
		Instruction manual [Wiring/Installation]	-		1
		Bracket	-		2 (1 set)
		Terminal screw	-		5
		Folding chart (50 divisions)	81406088-001		1
		Ribbon cassette	SR-921RC0000		1

Example of recording

Labels pointing to the recording chart:
- Digital recording/printing
- Trace printing
- Scale
- Channel number
- Periodic data printing
- Chart speed

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 digit	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 % ±1 digit	1 °C
	WRe5-WRe26	0 to 2315 °C	±69.0 mV	±0.2 % ±1 digit	1 °C
	NiMo-Ni	0.0 to 290.0 °C	±13.8 mV		0.1 °C
		0.0 to 600.0 °C	±27.6 mV		0.1 °C
		0 to 1310 °C	±69.0 mV		1 °C
	PlatinelII	0.0 to 350.0 °C	±13.8 mV	±0.15 % ±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 % ±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 % ±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 % ± 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, PlatinelII, 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 % ±1 digit
R, S	0 to 400 °C	±0.2 % ±1 digit
B	0 to 400 °C	None
B	400 to 800 °C	±0.2 % ±1 digit
W-WRe26	0 to 400 °C	±0.3 % ±1 digit
PtRh40-PtRh20	0 to 400 °C	±1.5 % ±1 digit
PtRh40-PtRh20	400 to 800 °C	±0.8 % ±1 digit
CR-AuFe	0 to 20 K	±0.5 % ±1 digit
CR-AuFe	20 to 50 K	±0.3 % ±1 digit
Pt-Co	4 to 20 K	±0.5 % ±1 digit
Pt-Co	20 to 50 K	±0.3 % ±1 digit

Model selection

I		II		III		IV		V		VI		VII	Ex. SR-106AN00NNN

I	II	III	IV	V	VI	VII	Discriptions
Model	Input point	Power	Communi-cations	Alarm output + remote contacts	Addition	Design code	
SR-1							100mm chart recorder
	06						6 points
		A					100 to 240 Vac
			N				None
			E				Ethernet
			R				RS232C
			A				RS422A/RS485
			Q				RS232C+RS485
			C				RS422A/RS485+RS485
			G				Ethernet + RS422A/RS485 + RS485
				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
					0		None
					D		With inspection results
					Y		With traceability certification
						NNN	None

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Consumables

• About attached chart paper

Item	Item number	Remarks	Printed sca
Folding chart 50 divisions	81406088-001	10 books 16 m	0, 20, 40, 60, 80, 100
Folding chart 40 divisions	81425048-004	10 books 16 m	0, 10, 20, 30, 40 0, 20, 40, 60, 80 0, 50, 100, 150, 200 The above 3 paterns are printed.
Folding chart 50 divisions	81425048-001	10 books 16 m	0, 10, 20, 30, 40, 50 0, 20, 40, 60, 80, 100 0, 40, 80, 120, 160, 200 The above 3 paterns are printed.
Folding chart 60 divisions	81425048-002	10 books 16 m	0, 10, 20, 30, 40, 50, 60 0, 20, 40, 60, 80, 100, 120 0, 50, 100, 150, 200, 250, 300 The above 3 paterns are printed.
Folding chart 70 divisions	81425048-003	10 books 16 m	0, 2, 4, 6, 8, 10, 12, 14
Folding chart 75 divisions	81425048-005	10 books 16 m	0, 50, 100, 150
Clean paper chart	81407115-001	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-921RC0000	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	

External dimensions

(Unit: mm)

144
63 · 18 · 63
144

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

12
137
161
12

154.4
27.2
195
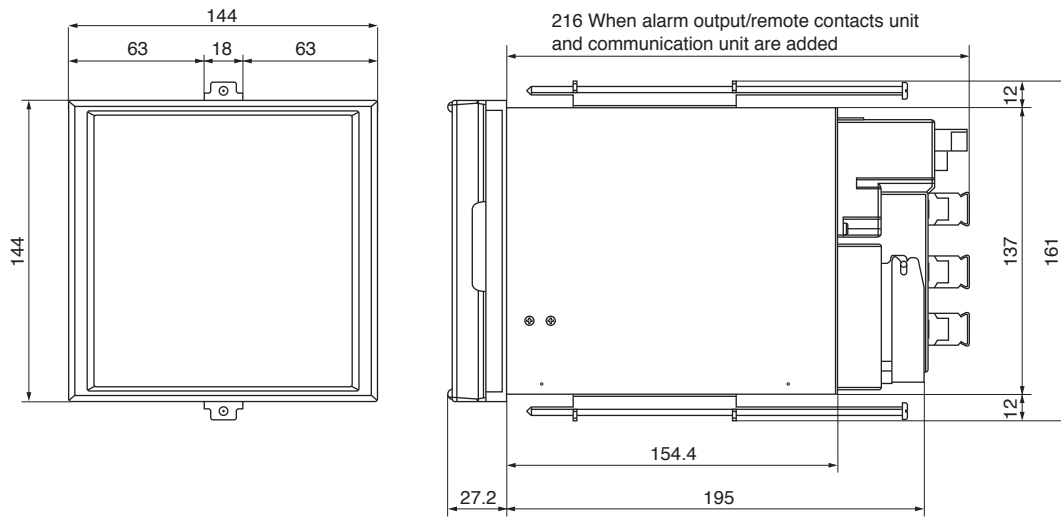
Mounting

(Unit: mm)

● **Minimum interval on multiple units mounting**

138^{+1}_{0}

138^{+1}_{0}

200

200
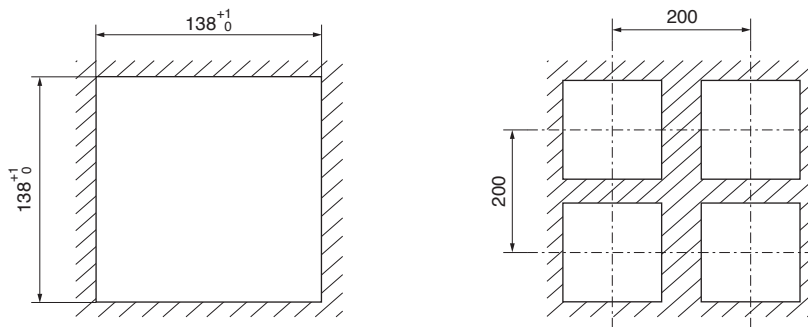
Panel mounting method

Panel thickness (2 to 6 mm)
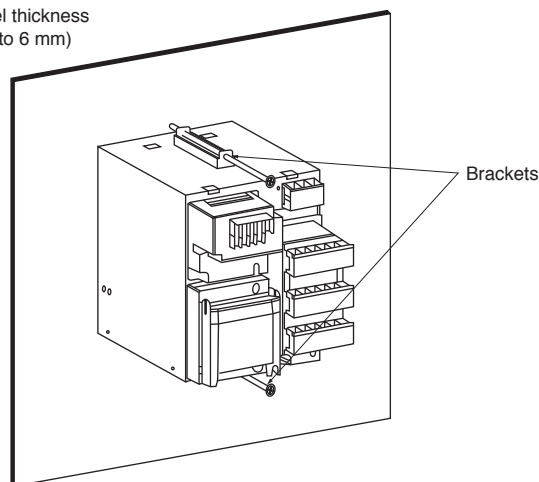
Brackets

(1) Insert the unit into the panel cutout from the front of the panel.
(2) Fix the unit to the panel using the brackets (tightening torque: 1.0 Nm).
    Brackets are attached to the top and bottom surfaces.

Wiring

■ **The figure below is the diagram of the terminal board with the option [Alarm relay output (6 points 'a' contact) + remote contacts and communication interface].**

Communications terminal (option)   * RS232C and RS422/485 for COM1 are specified on purchase.
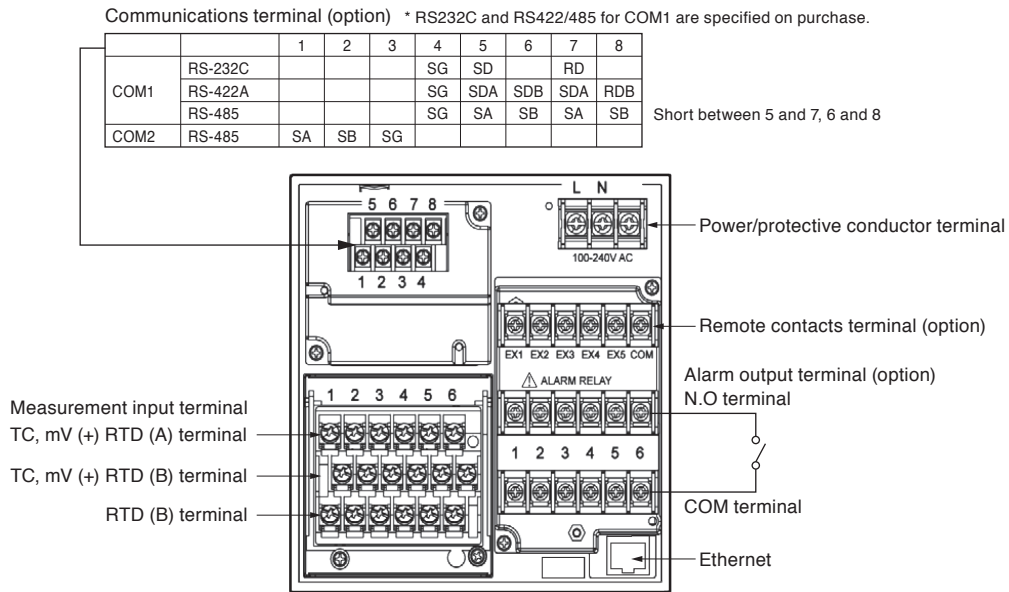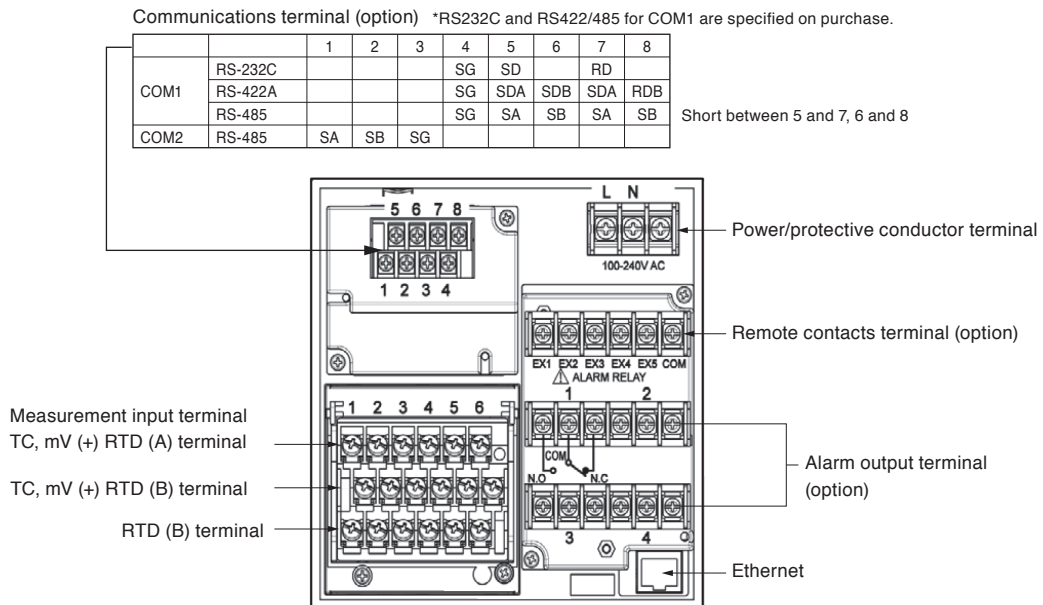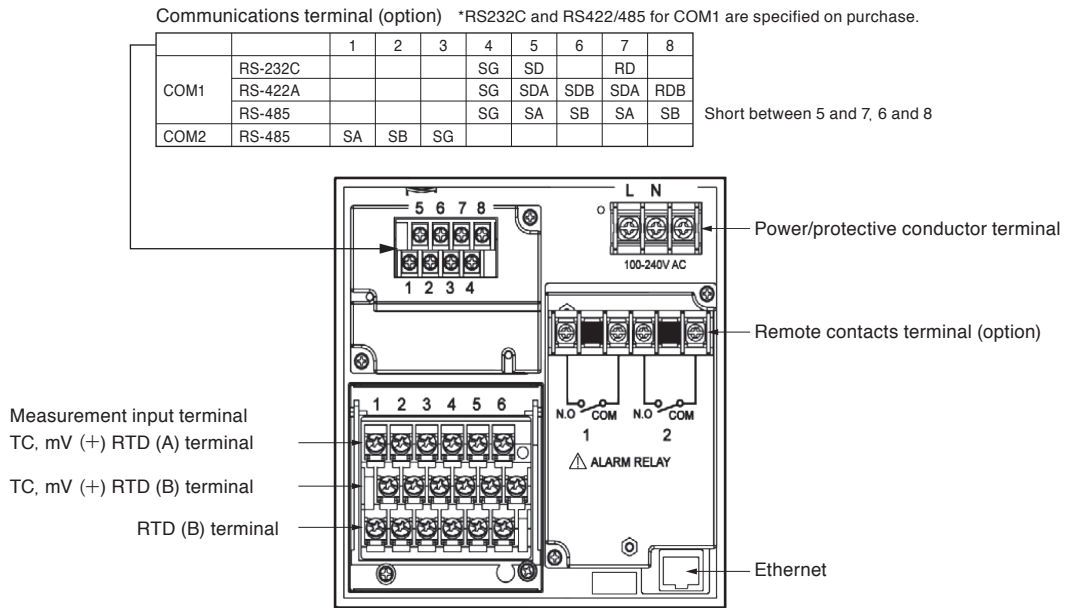
		1	2	3	4	5	6	7	8	
COM1	RS-232C				SG	SD		RD		
	RS-422A				SG	SDA	SDB	SDA	RDB	
	RS-485				SG	SA	SB	SA	SB	Short between 5 and 7, 6 and 8
COM2	RS-485	SA	SB	SG						

Power/protective conductor terminal

Remote contacts terminal (option)

Alarm output terminal (option)
N.O terminal

COM terminal

Ethernet

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

TC, mV (+) RTD (B) terminal

RTD (B) terminal

■ **The figure below is the diagram of the terminal board with the option [Alarm relay output (4 points 'c' contact) + remote contacts (20 points) and communication interface].**

Communications terminal (option)   *RS232C and RS422/485 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	Short between 5 and 7, 6 and 8
COM2	RS-485	SA	SB	SG						

Power/protective conductor terminal

Remote contacts terminal (option)

Alarm output terminal
(option)

Ethernet

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

TC, mV (+) RTD (B) terminal

RTD (B) terminal

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■ The figure below is the diagram of the terminal board with the option [Alarm relay output (2 points 'a' contact) and communication interface].

Communications terminal (option)   *RS232C and RS422/485 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	Short between 5 and 7, 6 and 8
	RS-485				SG	SA	SB	SA	SB	
COM2	RS-485	SA	SB	SG						

Power/protective conductor terminal

Remote contacts terminal (option)

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

TC, mV (+) RTD (B) terminal

RTD (B) terminal

Ethernet

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