

Paperless Recorder Advanced Recorder | ARF212/224/236/248

ARF212/224/236/248 Paperless Recorders have a highly visible 12.1-inch TFT color LCD, incorporate advanced functions, are easy to use, and are network-compatible.

A sampling rate of 100 ms for all 48 channels* and a precision of $\pm 0.1\%$ are achieved, and measured data can be stored in internal memory or on a CF (CompactFlash) memory card or USB mass storage device. Ethernet compatibility enables monitoring in a web browser running on PCs on the network. Also, data files can be retrieved by FTP and the ARF can send notifications by e-mail.

*Supported at a measurement cycle of 100 ms.



Specifications

Input	Input type	DC voltage, DC current, thermocouple, resistance thermometer detector * DC current input is supported by adding an external reception resistor.
	Number of input channels	12/24/36/48
	Input measurement cycle	100 ms specification: approx. 100 ms for all inputs 1 s specification: approx. 300 ms for all inputs
	Accuracy rating	$\pm 0.1\% \pm 1$ digit (there are also exceptional standards)
Display	Display	12.1-inch TFT color LCD
	Display type	- Measurement data (trend display, numerical value display, bar graph display) - Historical trend displays (can be displayed simultaneously with real-time trends) - Information displays (alarm display, marker list, file list) - Settings screens (alarms, arithmetic operations, memory, system, maintenance, communications, etc.)
	LED backlight	Auto/manual OFF function, adjustable in 4 brightness levels Half-life of backlight brightness: approx. 5 years
Recording	Internal memory	Flash memory (capacity: 8 MB)
	External memory	CF (CompactFlash) card (capacity: 128 MB to 2 GB)
	Recording cycle	100, 200, 500 ms*1 1, 2, 3, 5, 10, 15, 20, 30 s 1, 2, 3, 5, 10, 15, 20, 30, 60 min
	Recorded data	Measurement data: file name (group name), recording start date/time, tag, measurement data, alarm status/type, marker text, setting parameters
	Save format	Selectable between binary*2 and CSV format for each group.
	Save method	Manual start/stop, schedule, trigger signal (alarm, contact input), recording of data before/after trigger point
Computation	Number of operations	Max. 128
	Operation type	Arithmetic operations, comparison operations, logical operations, general functions, integration operations, channel data operations, dew point, relative humidity, F value, CF card remaining capacity, etc.
Alarm functions	Number of settings	Max. 4 settings for each channel
	Alarm types	Upper limit, lower limit, diff. upper limit, diff. lower limit, error data
	ON delay	Delay time setting range 1 to 3,600 s
	Alarm output	AND/OR can be set.
Communication functions	Medium	Ethernet (10BASE-T/100BASE-T)
	FTP server	Data files are read from a computer on the network.
	FTP client	Data files are transferred to the server on the network.
	SNTP client	Clock is synchronized with the SNTP server on the network.
	Web server	HTTP1.0 compliant: measurement data, alarm, etc. are displayed and set on the browser software
	E-mail	Mail notification at specified times when an alarm is set Notified address: Max. 8 addresses
General specifications	Network Instrumentation Module communication (optional)	Reading and recording, through communication, of data from Network Instrumentation Modules connected via Ethernet
	Rated power supply voltage	100 to 240 Vac 50/60 Hz
	Max. power consumption	65 VA
	Normal operating conditions	Ambient temperature/humidity ranges: 0 to 50 °C, 20 to 80%RH Supply power voltage: 90 to 264 Vac Supply power frequency: 50/60 Hz $\pm 2\%$ Attitude: Left-right/forward tilt 0°, backward tilt 0 to 20° Warm-up time: 30 min or more
	Weight	Approx. 7.2 kg
	Mounting method	Imbedded in panel
	Option specifications	Alarm output
Alarm MOS relay output		MOS relay contacts are output at alarm generation and input errors.
Non-voltage contact input		Recording of ON/OFF state, pulse input (up to 5 Hz), recording start/stop, marker write, resetting of integration operation, time correction

Input list

Input type	Measurement range
DC voltage	± 13.80 mV to ± 2.000 V
(Resistor divider built-in)	± 5.000 V to ± 50.00 V

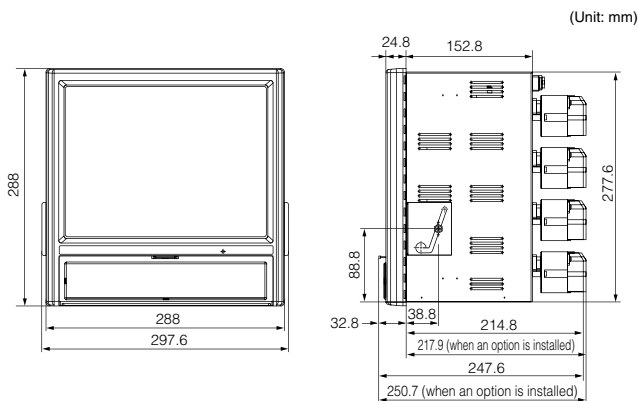
Input type	Symbol	Input type	Symbol
Thermocouple	K, E, J, T, R, S, B, N, W-WRe26,	Resistance thermometer detector	Pt100, JPt100,
	WRe5-WRe26, PtRh40-PtRh20,		Pt50, Pt-Co
	Ni-Mo-Ni, CR-AuFe, Platinell, U, L		

Standards for input sensor

Thermocouple K, E, J, T, R, S, B, N: IEC584, JIS C1602-1995
W-WRe26, WRe5-WRe26, PtRh40-PtRh20, Platinell, Ni-Mo-Ni
CR-AuFe: ASTM Vol14.03
WRe5-26: ASTM E988-90
U (Cu-CuNi), L (Fe-CuNi): DIN43710

Resistance thermometer detector Pt100: IEC751 (1995), JI S C1604-1997, JPt100: JIS C1606-1989

External dimensions



*1. Regardless of recording cycle, up to 6 groups of 56 channels/group (128 channels in total) can be registered.

*2. To handle binary format data on a PC, a separate data analysis tool is required.

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Model No. configuration

Ex.: ARF212AS00000

Basic model No.	Power supply voltage	Input	Additional function 1	Additional function 2	Additional function 3	Additional treatment 1	Additional treatment 2	Description
ARF212	A	S						12 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (100 ms specification), CF card (128 MB) provided
ARF224	A	S						24 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (100 ms specification), CF card (128 MB) provided
ARF236	A	S						36 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (100 ms specification), CF card (128 MB) provided
ARF248	A	S						48 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (100 ms specification), CF card (128 MB) provided
ARF212	A	L						12 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (1 s specification), CF card (128 MB) provided
ARF224	A	L						24 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (1 s specification), CF card (128 MB) provided
ARF236	A	L						36 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (1 s specification), CF card (128 MB) provided
ARF248	A	L						48 inputs, 100 to 240 Vac, 50/60 Hz Standard multi-input (1 s specification), CF card (128 MB) provided
			0					None
			1					12 relay outputs (a contacts)
			2					6 relay outputs (c contacts)
			3					24 relay outputs (a contacts)
			4					12 relay outputs (c contacts)
			5					12 (a contacts) + 6 (c contacts) relay outputs
			A					8 non-voltage contact inputs
			B					8 non-voltage contact inputs + 12 relay outputs (a contacts)
			C					8 non-voltage contact inputs + 6 relay outputs (c contacts)
			D					8 non-voltage contact inputs + 24 relay outputs (a contacts)
			E					8 non-voltage contact inputs + 12 relay outputs (c contacts)
			F					8 non-voltage contact inputs and 12 (a contacts) + 6 (c contacts) relay outputs
				0				None
				3				Network Instrumentation Module communication (Ethernet)
					0			None
						0		None
						D		Inspection certificate
						T		Tropical treatment
						B		Tropicalization treatment + inspection certificate
						Y		Supports traceability certification
							0	No additional treatment

Optional Parts (Separately Sold)

Name	Model No.
CF (CompactFlash) card 128 MB	ARF910CF0128
CF (CompactFlash) card 256 MB	ARF910CF0256
CF (CompactFlash) card 512 MB	ARF910CF0512
CF (CompactFlash) card 1 GB	ARF910CF1000
CF (CompactFlash) card 2 GB	ARF910CF2000

Name	Model No.
CF (CompactFlash) card adapter for PC	ARF910ADP000
ARF Data Analysis Tool	ARF990DA0000
250 Ω resistor, accuracy ±0.02%, 1 pc	81401325
250 Ω resistors, accuracy ±0.05%, 2 pcs	81446642-001

1 DIGITAL CONTROLLERS
2 RECORDERS, INDICATORS
3 CONVERTERS
4 FLAME SAFEGUARD SYSTEM
5 ACTUATORS
6 SENSORS
7 GAS FLOW MEASUREMENT AND CONTROL PRODUCTS