

ARF100 Paperless Recorder User's Manual for installation and wiring



Thank you for purchasing the ARF100 Paperless Recorder.

This manual contains information for ensuring the correct use of the ARF100 Paperless Recorder.

This manual should be read by those who design and maintain equipment that uses the ARF100 Paperless Recorder.

Azbil Corporation

NOTICE

Be sure that the user receives this manual before the product is used.

Copying or duplicating this user's manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

Considerable effort has been made to ensure that this manual is free from inaccuracies and omissions. If you should find an error or omission, please contact the azbil Group.

In no event is Azbil Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

Conventions Used in This Manual

- To prevent injury to the operator and others, and to prevent property damage, the following types of safety precautions are indicated:



Warnings are indicated when mishandling this product might result in death or serious injury.



Cautions are indicated when mishandling this product might result in minor injury to the user, or physical damage to the product.

- In describing the product, this manual uses the icons and conventions listed below.



Use caution when handling the product.



The indicated action is prohibited.



Be sure to follow the indicated instructions.

Safety Precautions

WARNING

-  Be sure to turn OFF the power supply before connecting wires to the power or input/output terminals to prevent an electric shock.
-  To prevent electric shock, connect the protective ground terminal to a ground of less than 100 Ω .
-  To prevent electric shock, attach the terminal cover after wiring.

CAUTION

-  Wire the recorder following the instructions in this manual, using the specified type of power leads and installation methods. Failure to do so might cause electric shock, fire or faulty operation.
-  Do not disassemble the recorder or touch components inside it. Doing so might cause electric shock or faulty operation.
-  If some hazardous condition arises—for example, if there is smoke from the recorder or if there is a smell of something burning—immediately turn the power off.
-  When disposing of this recorder, treat it appropriately as industrial waste in accordance with local regulations.

Contents

SAFETY PRECAUTIONS

Chapter 1. OVERVIEW

1.1. Introduction	1
■ Main Features.....	1
■ Additional functions	1
1.2. Model Selection Guide.....	2
■ Model number configuration	2
■ Optional parts	2
■ Data analysis software	2

Chapter 2. PART NAMES AND FUNCTIONS

■ Main unit.....	3
■ Rear terminals	3

Chapter 3. MOUNTING AND WIRING

3.1. Installation Site	5
3.2. Mounting	5
■ Panel cutout dimensions	5
■ Mounting methods.....	6
3.3. Wiring Precautions	7
3.4. Terminal Block	8
3.5. Wiring of Power and Protective Ground Terminals	9
3.6. Wiring of Measurement Input Terminals.....	10
3.7. Alarm Output Wiring (for applicable models)	11
3.8. Digital Input Terminals (for applicable models)	13
3.9. Ethernet Connections.....	14

Chapter 1. OVERVIEW

1.1. Introduction

The ARF100 Paperless Recorder is able to measure temperature and various other industrial process quantities on up to 12 channels and display real-time trends, bar graphs, numeric values, etc. in a variety of formats on a 5.6-inch TFT color LCD. This recorder can also store data, either in its internal memory or on a memory card (CF card). Stored data can be loaded into off-the-shelf software like Excel, and data analysis software especially designed for the ARF100 is also available.

■ Main Features

- **A variety of screen displays**
Real-time trends, bar graphs, data in table format, and combined displays of real-time trends plus bar graphs, real time trends with numeric values, and real time trends plus historical trends can be freely selected and monitored in the most suitable display format for your requirements. Other displays include a summary of past alarm activity and a list of annotations made with the marker function. In addition, up to 5 internal channel groups* can be registered, allowing easy switching between them.
- **Marker function**
Symbols and annotations (up to 30 alphanumeric characters) can be written on trend screens. Annotations can be written freely, and also up to 50 can be assigned to key combinations for easy writing. Annotations can be written on stored and replayed trend screens, too. Adding a symbol only without text is also possible.
- **Various memory functions**
Start/stop of data storage can be executed by user-selected conditions like key operation, alarm occurrence, time, etc. and simultaneous storage to as many as 5 files* is available. In normal operation, data is stored in internal memory and can be saved on a CF memory card.
- **Analog recorder feeling**
Since the trend screen displays data in chart format with scales and “pens,” monitoring the data has the feel of monitoring an analog recorder.
- **Easy setup**
Parameters are set easily and interactively by selecting an item from the menu with the keys and then by opening a window. Fast setup of essential parameters can be done on the Home screen.
- **Consumables not required**
Since it is paperless, this recorder does not require the consumables needed by other recorders, like charts, pens and ink.
- **Easy data management**
Older data stored on a CF card can be read and managed using off-the-shelf software like Excel (a registered trademark of Microsoft Corporation).
- **Availability of software package**
Data analysis can be executed conveniently on a PC with a dedicated software package, ARF Data Analysis Tool, sold separately (ARF990DA0000, for Windows).

*: With a fast recording cycle there is a maximum of 3 groups or 3 files.

■ Additional functions

Additional functions are as follows:

Alarm outputs: 12 alarm relay outputs, 8 MOS alarm relay outputs

Contact inputs: 8 digital (non-voltage contact) inputs

Network Instrumentation Module communications (via Ethernet):

The ARF100 can display and record data in a Network Instrumentation Module via Ethernet.

1.2. Model Selection Guide

■ Model number configuration

Basic model No.	Power supply	Input	Optional function	Optional function	Optional function	Additional treatment	Additional treatment	Notes
ARF106								6 inputs
ARF112								12 inputs
	A							100–240 Vac, 50/60 Hz
		S						Standard multi-input (input sampling time 100 ms)
			0					None
			1					12 relay outputs (normally open contacts)
			7					8 digital inputs + 8 MOS relay outputs
				0				None
				3				Network Instrumentation Module communications (via Ethernet)
					0			None
						0		None
						D		With inspection results
						Y		With traceability certification
							0	None

■ Optional parts

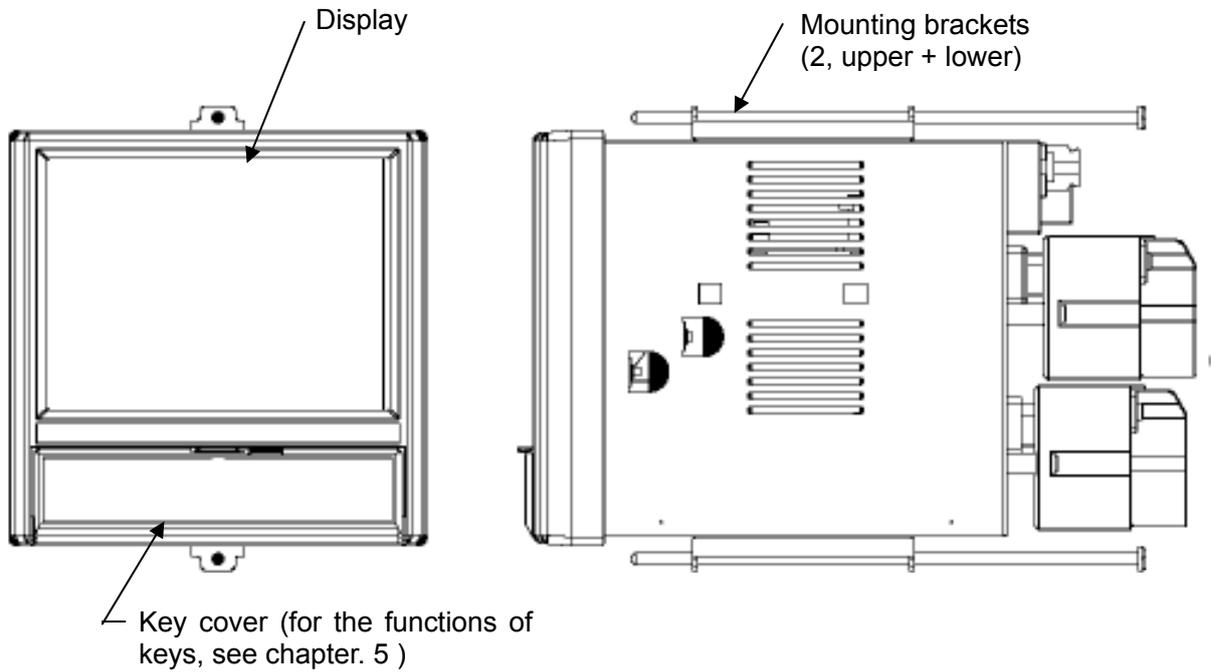
Name	Model number	Notes
CompactFlash card	ARF910CF0128	128 MB
CompactFlash card	ARF910CF0256	256 MB
CompactFlash card	ARF910CF0512	512 MB
CompactFlash card	ARF910CF1000	1 GB
CompactFlash card	ARF910CF2000	2 GB
PC card adapter	ARF910ADP000	
Resistor	81401325	250 Ω ± 0.02 % (qty.: 1)
Resistor	81446642-001	250 Ω ± 0.05 % (qty.: 2)

■ Data analysis software

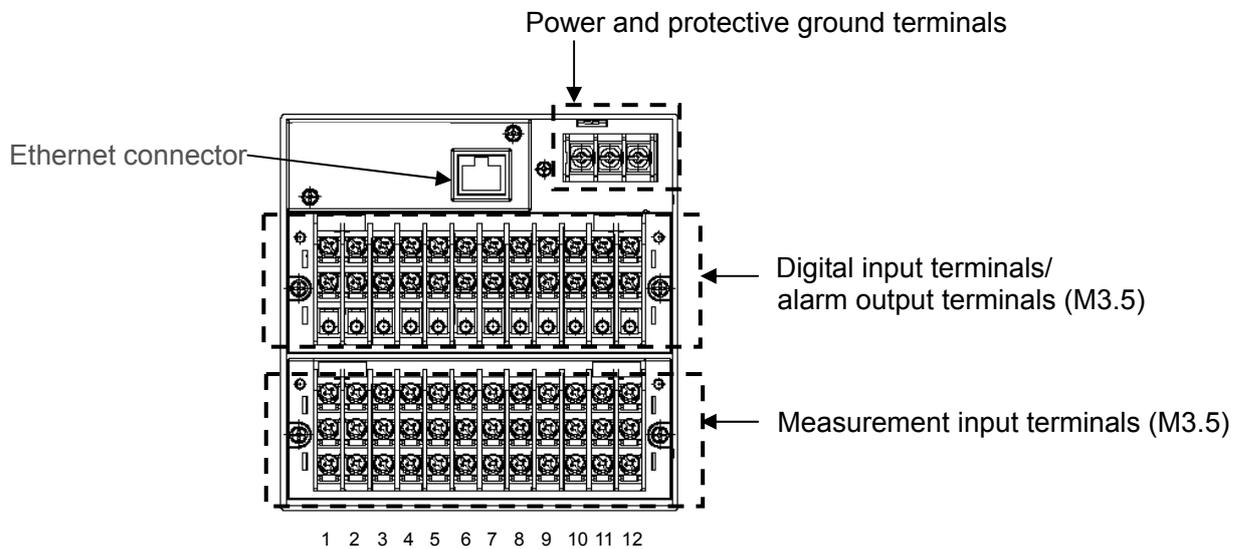
Name	Model number	Notes
ARF Data Analysis Tool	ARF990DA0000	For Windows

Chapter 2. PART NAMES AND FUNCTIONS

■ Main unit



■ Rear terminals



Chapter 3. MOUNTING AND WIRING

3.1. Installation Site

The ARF100 recorder is designed for indoor use. Install it in a location with the following characteristics:

- Steady ambient temperature and humidity of about 23 °C, 50 % RH
- Free from dust, smoke, steam, etc.
- Not subject to excessive mechanical vibration and shock
- Far from the sources of electrical or magnetic fields
- Not near flammable liquid or gas
- Protected from direct sunlight
- Where terminals are not near a heat source (to maximize measurement accuracy)

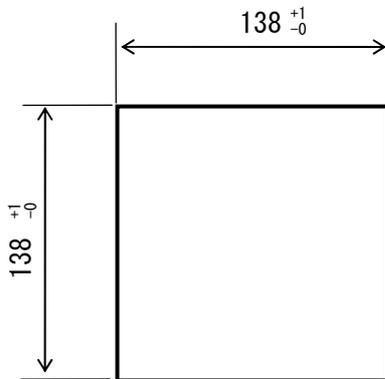
Handling Precautions

- To prevent temperature rise, do not put in an airtight enclosure.
- To prevent deformation of the front panel, do not expose to hot air exhaust (50 °C or more).

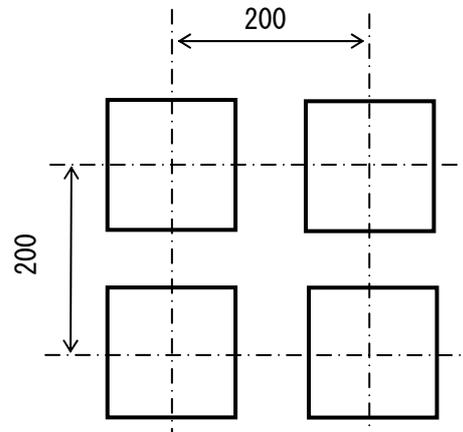
3.2. Mounting

■ Panel cutout dimensions

Unit: mm



● Minimum interval for gang-mounting



■ Mounting methods

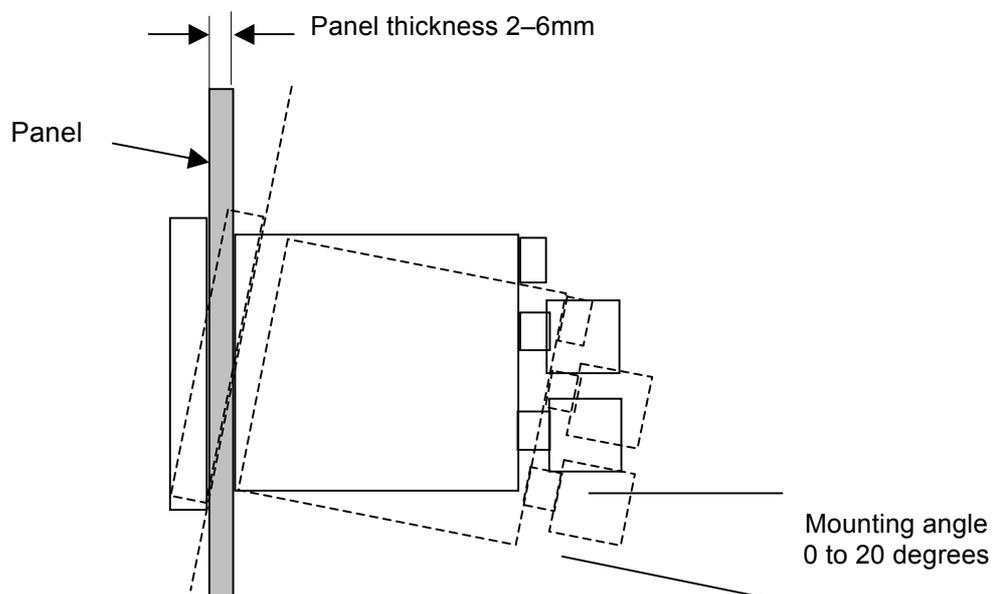
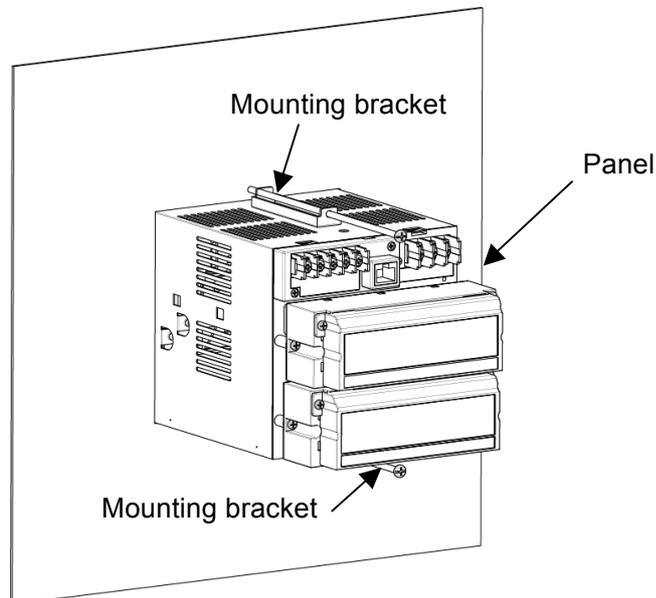
Warning

- **For mounting the recorder on the panel, be careful of injury by dropping it.**

Insert the recorder into a panel from the front and attach it with the upper and lower mounting brackets. Then tighten the mounting bracket screws.

Handling Precautions

- The recommended tightening torque is 1.0 N·m. Tightening the mounting bracket screws to a higher torque might deform or damage the case.
- In mounting, the top surface should not be tilted down toward the back more than 20°, and it should not be tilted up at all. Do not tilt toward the right or left sides.
- Mount on a panel made of steel plate 2 to 6 mm thick or a panel having equivalent strength.



3.3. Wiring Precautions

⚠ Warning

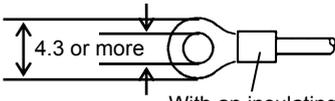
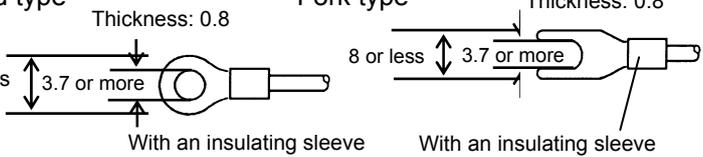
- Be sure to turn OFF the power supply before connecting wires to the power or input/output terminals to prevent an electric shock.
- Attach crimp terminals to the ends of wires to prevent looseness or disconnection of terminals and short-circuit between terminals. Use the crimp terminals with an insulating sleeve to prevent electric shock.
- Arrange and secure connected wires so that a passing person or object cannot easily be caught on them. Otherwise disconnection, electric shock, or other problems may occur.
- To prevent electric shock, connect the protective ground terminal to a ground of less than 100 Ω.
- To prevent electric shock, attach the terminal cover after wiring.

Handling Precautions

- Use a single-phase power supply having a stable voltage without any waveform distortion to prevent malfunction.
- Do not place the input/output wires close to, or in parallel with, power lines or high-voltage circuits. If they run parallel to each other, keep the I/O wires 50 cm or more apart.
- For thermocouple (TC) inputs, keep the input terminals away from a heat source (a heating body) to reduce a reference junction compensation error. Don't expose the input terminals to direct sunlight, etc.
- Don't use any unused terminals for relaying; otherwise the electric circuits may be damaged.
- To prevent malfunction, keep all connected wires as far from sources of electrical noise as possible. Use a countermeasure (see below) if wires are unavoidably close to a noise source.

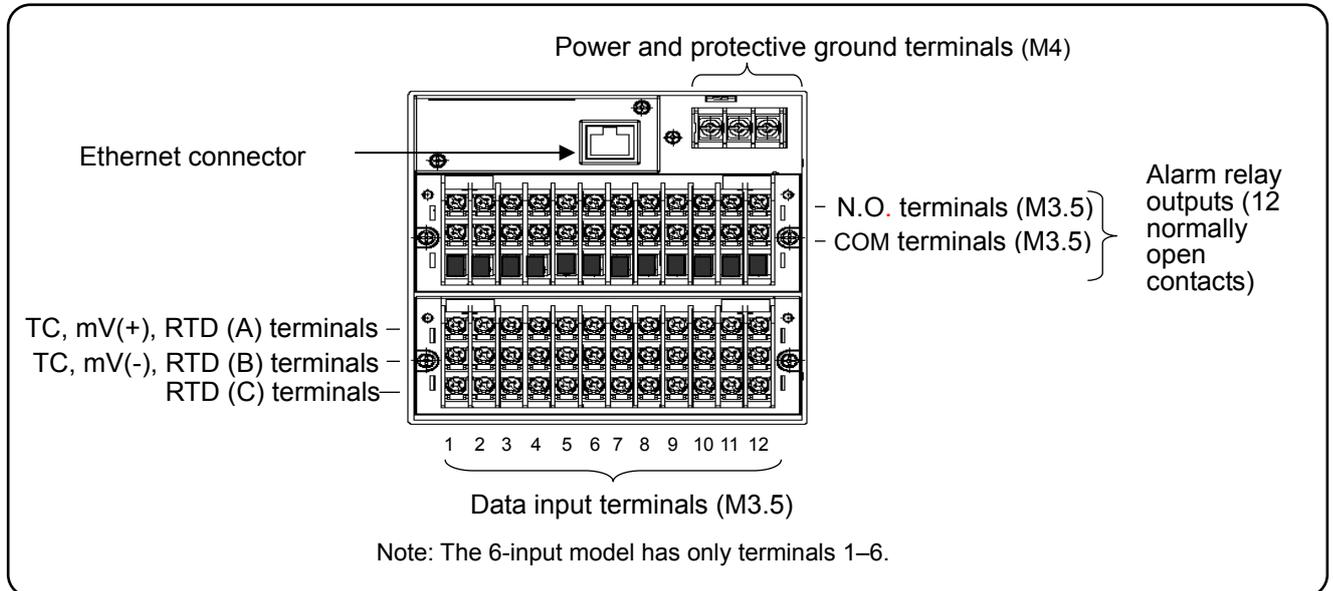
Major noise sources	<ul style="list-style-type: none"> • Electromagnetic switch, etc. • Power line with waveform distortion • Inverter • Thyristor regulator
Counter-measure	Insert noise filters between power terminals and input/output terminals. A CR filter is often used.

Terminal type and crimp terminal dimensions

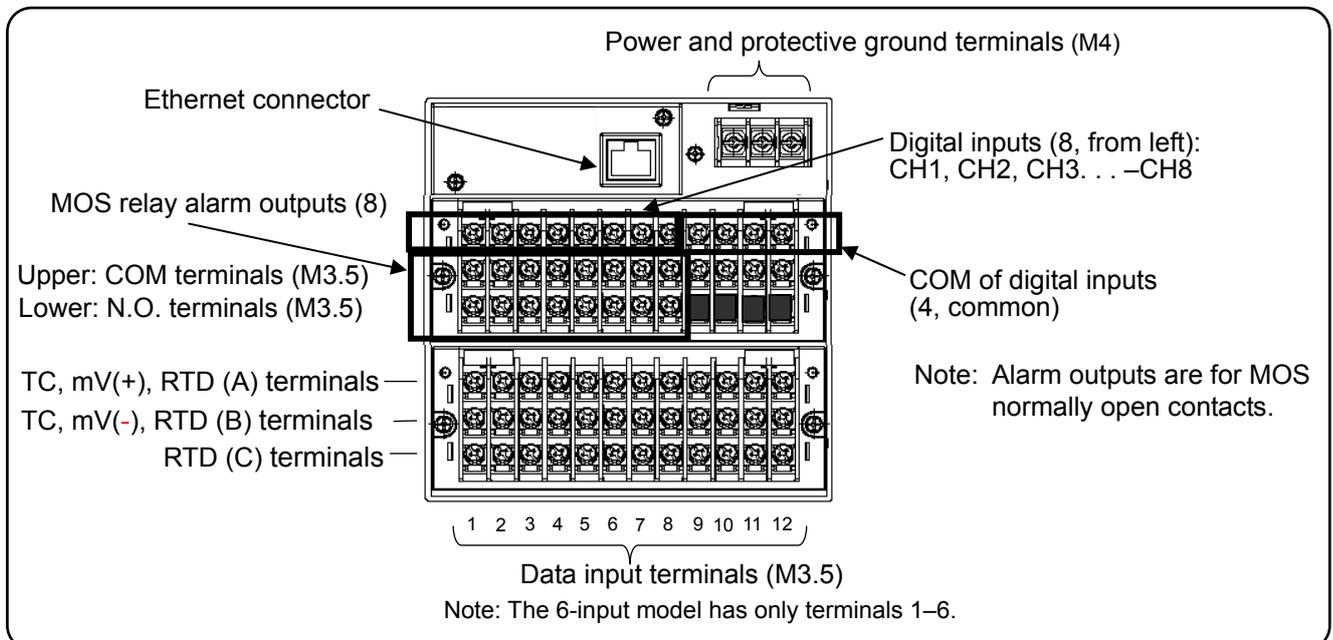
Terminal	Screw size	Tightening torque	Crimp terminal dimensions (unit: mm)
Power and protective ground terminals	M4	1.2N·m	Round type 8.5 or less 4.3 or more Thickness: 0.8 With an insulating sleeve 
Other terminals	M3.5	0.8N·m	Round type 8 or less 3.7 or more Thickness: 0.8 With an insulating sleeve Fork type 8 or less 3.7 or more Thickness: 0.8 With an insulating sleeve Note: Use the round type if possible. 

3.4. Terminal Block

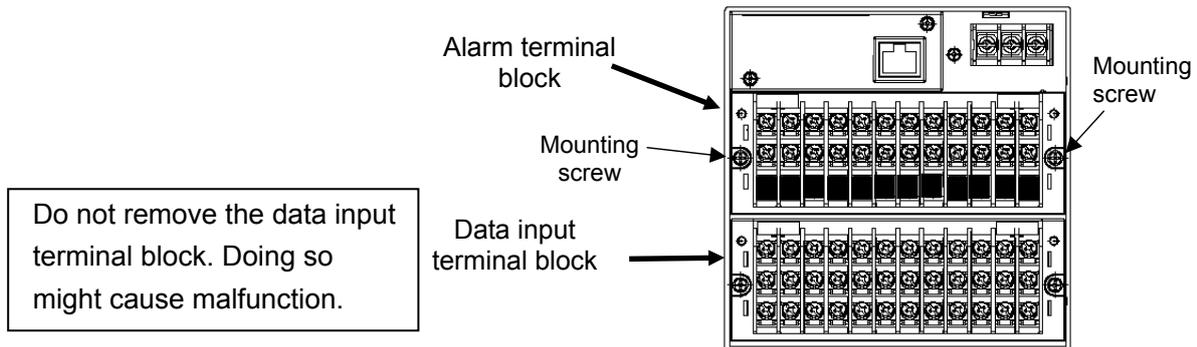
The following diagram shows the terminal block as it appears with 12 alarm relay outputs (Normally open contacts). The Ethernet connector is the standard type.



The following figure shows the terminal block as configured for 8 digital inputs + 8 MOS relay alarm outputs, with a communications interface. Ethernet connector is the standard type.



Note: The upper terminal block (including the alarm terminal block and the contact input terminal block) is removable for easy connection. Because the terminal block is connected by connectors, it can be removed easily by loosening two screws.

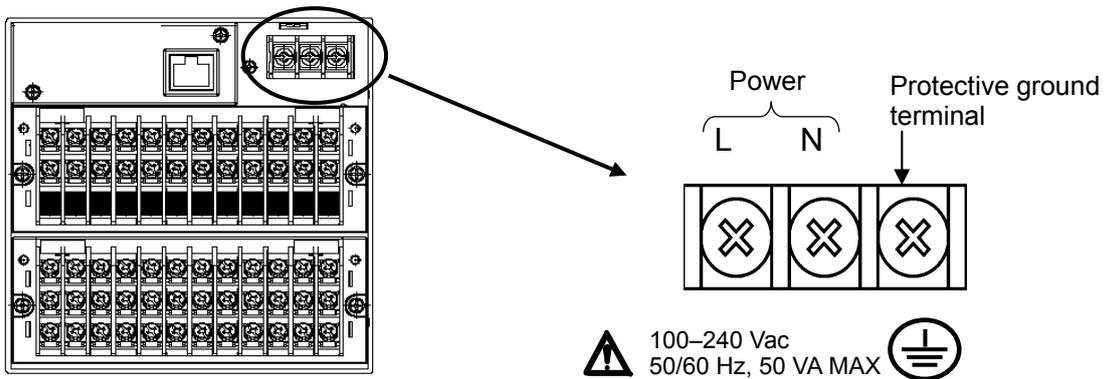


Handling Precautions

- Do not replace the thermocouple input terminal block (the lower terminal block) with the terminal block of another one. Measurement error will occur.
- Before mounting or dismounting a terminal block, turn off the external power switch to prevent the electrical circuits from being damaged.

3.5. Wiring of Power and Protective Ground Terminals

(1) Power and protective ground terminals



(2) Connection of power terminals

For connection to the power terminals, use a 600 V PVC-insulated cable terminated by crimp terminals with insulating sleeve.

Note: Use a cable conforming to the standards below.

- ◇ IEC 227-3
- ◇ ANSI/UL817
- ◇ CSA C22.2 No. 21 and No. 49

(3) Connection of protective ground terminal

Be sure to connect this terminal to the protective ground of the power supply facility. For this connection, use a cable terminated by a crimp terminal with an insulating sleeve.

- Ground wire: copper, 2 mm² or more in cross-sectional area (green/yellow)

Handling Precautions

- To prevent electric shock, attach the terminal cover after wiring.

3.6. Wiring of Measurement Input Terminals

(1) Allowable input voltage

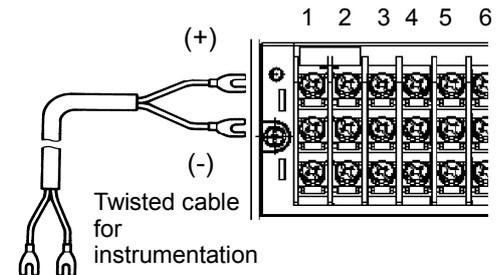
- Thermocouple input (burnout disabled), DC voltage input (± 2 V max.): ± 10 Vdc max.
- DC voltage input (± 5 to ± 50 V): ± 60 V max.
- Thermocouple input (burnout enabled), resistance thermometer (RTD) input: ± 6 Vdc max.

Handling Precautions

- Use crimp terminals with insulating sleeves on the end of wires connected to the input terminals.

(2) DC voltage (or current) input

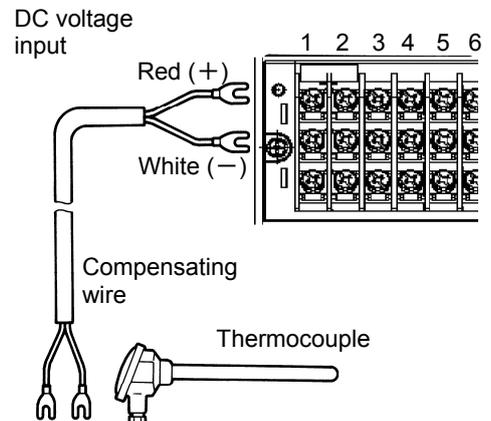
For input, use twisted cable made for instrumentation use, in order to suppress noise. For current input, connect a shunt resistor between the current input terminals of that channel before wiring.



(3) Thermocouple (TC) input

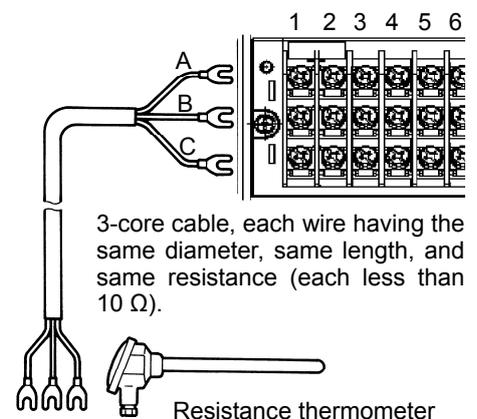
Be sure to use thermocouple wire (or compensating leads) to the input terminals of this recorder. If copper wire is used part of the way, a significant measuring error will occur. Avoid connecting a pair of thermocouple wires to another device (controller, etc.) in parallel because such a connection may affect the measurement of each device. If a parallel connection is unavoidable, check whether the effects are within the allowable range under the following conditions:

- Set the burnout to disabled.
- Ground the device that you wish to connect in parallel at one point. In addition, install the device near the ARF100 and if possible use the same power supply.
- Do not shut off the power of either device during operation.



(4) Resistance thermometer (RTD) input

Use a 3-core cable in which each lead has equal resistance. Also, do not connect a single RTD in parallel with more than one recorder (controller, etc.).



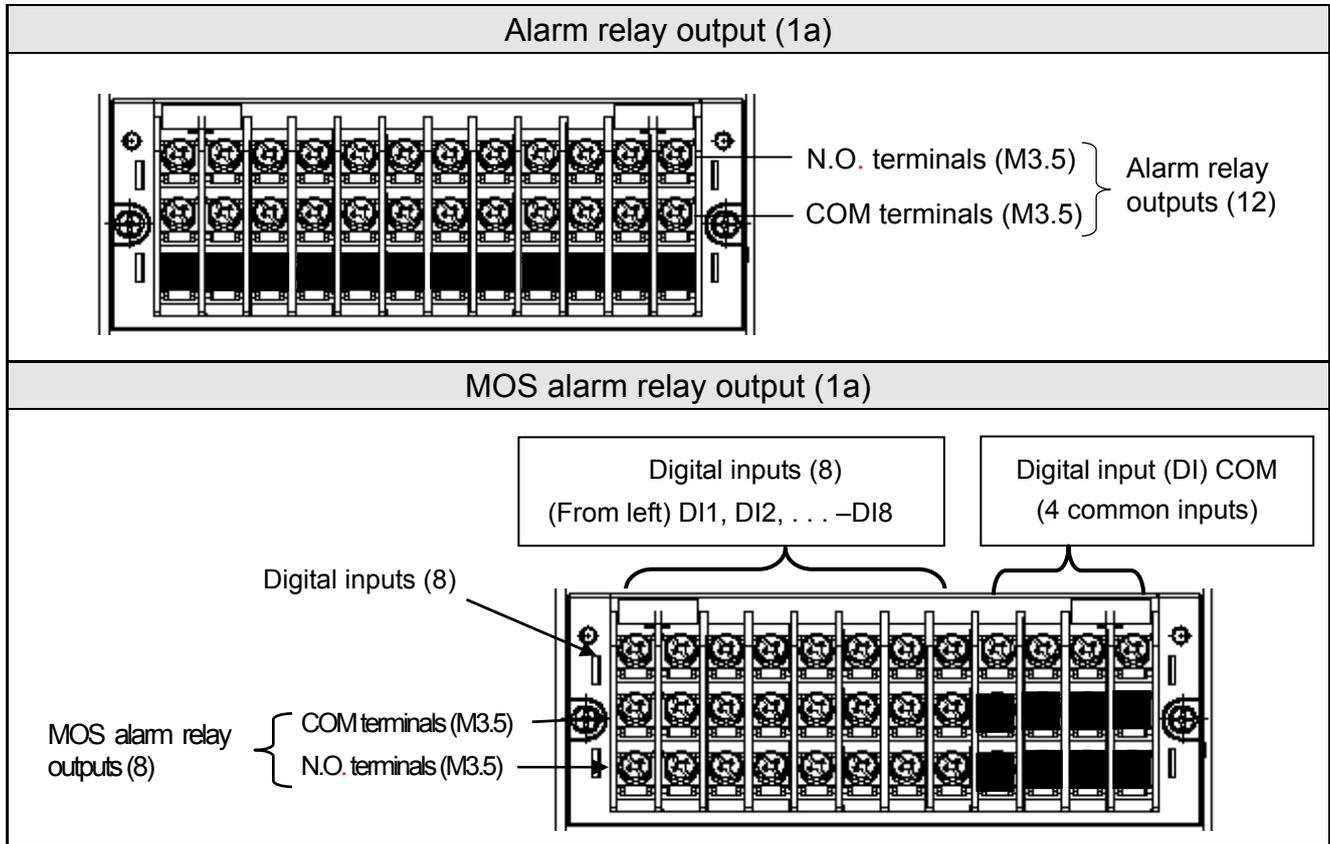
Handling Precautions

- The allowable amount of noise on the measurement input terminals is 30 Vac (or 60 Vdc) or less. Because of common mode noise and the like, take care that the allowable noise level is not exceeded. After wiring, attach the terminal cover to prevent electric shock and protect the input wires. Also, the terminal cover can reduce the reference junction compensation error for thermocouple input.
- Each channel is isolated each other. However, the C terminals of resistance thermometer are connected within channels 0-4, channels 5-8 and channels 9-12.

3.7. Alarm Output Wiring (for applicable models)

(1) Alarm output terminal layout

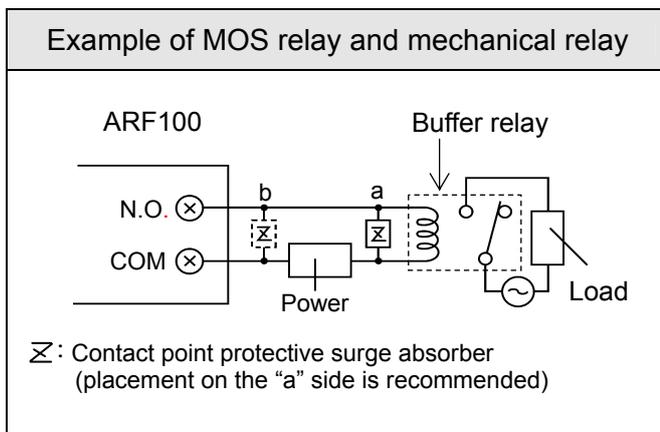
The terminal arrangement depends upon the type of alarm output.



(2) Wiring

Turn off the power supply and buffer relay power supply before wiring to prevent electric shock.

- ✧ Connect leads to the load via a buffer relay.
- ✧ Use leads with crimp terminal lugs (with insulating sleeves).



Warning

Connect a load that is within the specified contact capacity of the alarm output terminals.

Since the power for the buffer relay is applied to the alarm output terminals, touching these terminals will result in an electric shock. Be sure to attach the terminal cover after wiring.

Handling Precautions

- The alarm output device can be damaged by a spark from the buffer relay or breakdown of the surge absorbing element. Be sure to take appropriate safety measures as necessary.

(3) Specifications for wiring

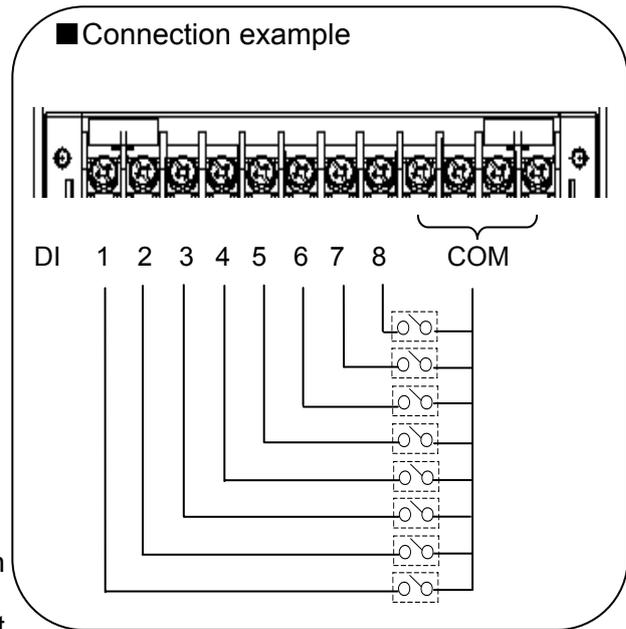
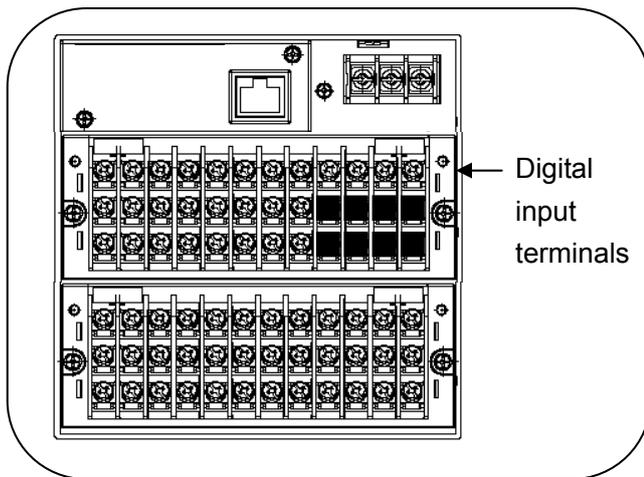
Item	Description												
Contact rating of MOS relay outputs	<ul style="list-style-type: none"> Maximum voltage: 240 Vac, 240 Vdc Maximum current: 50 mAac, 50 mAdc (regardless of load type) 												
Contact rating of mechanical relay outputs	<table border="1" data-bbox="564 311 1171 456"> <thead> <tr> <th>Power supply</th> <th>Resistive load</th> <th>Inductive load</th> </tr> </thead> <tbody> <tr> <td>100 Vac</td> <td>0.5 A</td> <td>0.2 A</td> </tr> <tr> <td>240 Vac</td> <td>0.2 A</td> <td>0.1 A</td> </tr> <tr> <td>30 Vdc</td> <td>0.3 A</td> <td>0.1 A</td> </tr> </tbody> </table> <p data-bbox="1182 389 1458 456">Minimum load: 100 μA and 100 mVdc</p>	Power supply	Resistive load	Inductive load	100 Vac	0.5 A	0.2 A	240 Vac	0.2 A	0.1 A	30 Vdc	0.3 A	0.1 A
Power supply	Resistive load	Inductive load											
100 Vac	0.5 A	0.2 A											
240 Vac	0.2 A	0.1 A											
30 Vdc	0.3 A	0.1 A											
Selection of buffer relay	<ul style="list-style-type: none"> Coil rating: less than the contact rating of the output terminals Contact rating: more than twice the load current <p data-bbox="544 562 1445 651">A relay with a built-in coil surge absorption element is recommended. Add an additional buffer relay if the buffer relay does not satisfy the load rating.</p>												
Selection of surge absorber and mounting	<ul style="list-style-type: none"> Use an appropriate surge absorber element to protect the contacts if the buffer relay does not already have one. The MOS relay might burn out if a signal exceeding the contact rating is applied, even momentarily. To prevent malfunction caused by a light load, the most effective mounting position for the surge absorber is on the coil side of the buffer relay ('a' in the wiring diagram in section 3.7, (2)). The surge absorber is generally composed of a capacitor (C) and resistor (R). <p data-bbox="552 943 1023 1032"><u>Reference values for C and R</u> C: 0.01 μF (rating about 1 kV) R: 100 to 150 Ω (rating about 1 W)</p> <p data-bbox="552 1055 1374 1084">Azbil Corporation's surge absorber is No. 81446365-001 (qty. 10).</p>												

Handling Precautions

- The common terminal of each alarm output is separate from the others.

3.8. Digital Input Terminals (for applicable models)

(1) Digital input terminals



(2) Wiring

Turn off the power before wiring to prevent an electric shock.

Use a non-voltage contact signal for digital input terminals.

Use crimp terminals with insulating sleeves on the end of wires connected to the digital input terminals.

Digital input specifications

Voltage with contacts open: Approx. 5 V

Current when contacts close: Approx. 2 mA

Handling Precautions

- Relays and switches connected to the contact input terminals should be designed for low voltage/current load use.

■ DI terminal functions

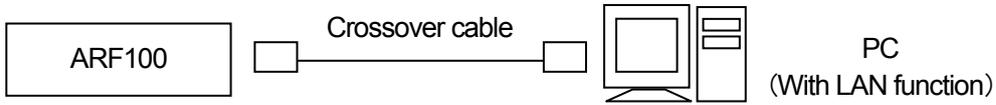
- Digital input** Detects ON/OFF (closed/open) state. Set the range type to DI. (See 11.2, "Input Settings.")
- Pulse input** For pulse input, set the range type to either Pulse (+) or Pulse (-). (See 11.2, "Input Settings.")
- Integration reset** Resets the cumulative count. When the specified digital input terminal is energized, the count is reset. (See 11.6, "Totalizer settings.")
- Marker** Writes annotations. Annotations can be written on trends while the digital input terminal is ON. (See 11.8, "Marker settings.")
- File write** Starts/stops recording of data in an internal memory file. Recording starts when the digital input terminal turns ON. (See 11.5, "File Settings Screen.")
- Time correction** Adjusts the time when the digital input terminal turns ON. (See 11.11, "System Settings.")

- For a function to operate, the relevant terminal and COM terminal must be connected for at least 0.1 s.

3.9. Ethernet Connections

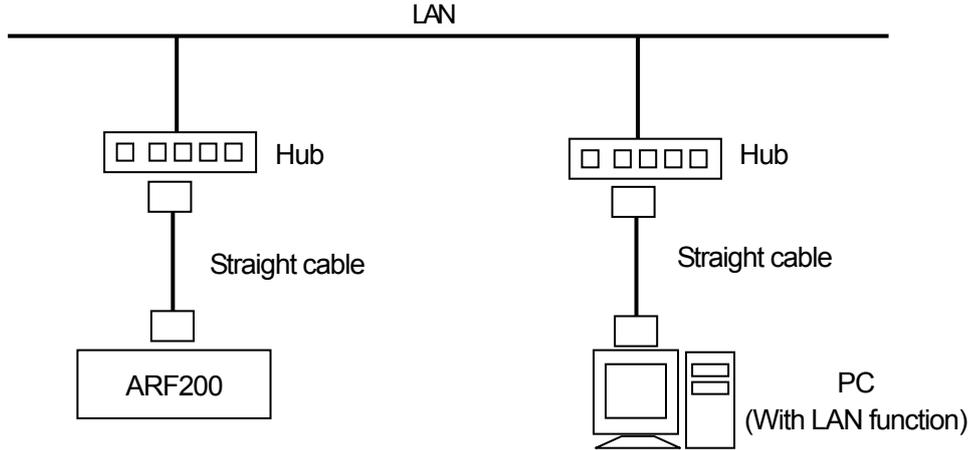
1-to-1 connection with a PC

For a 1-to-1 connection between the ARF and a PC, use a crossover cable.



N-to-N connections with PCs

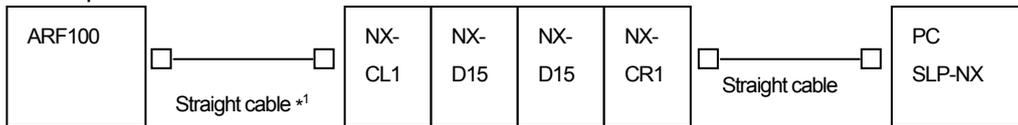
When connecting to multiple PCs or to an existing LAN, use a hub and straight cables between the hub and ARF or PC units.



Connection with Network Instrumentation Modules (option)

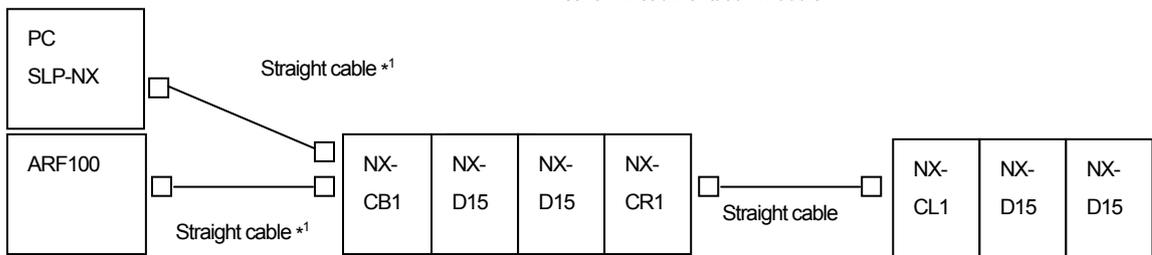
The Network Instrumentation Modules communications (Ethernet) option enables an Ethernet connection and communications between the ARF100 and Network Instrumentation Modules over Ethernet.

Connection example 1



NX-D15: Controller module
 NX-CL1: For communications adapter left connection
 NX-CR1: For communications adapter right connection
 SLP-NX: PC loader for Network Instrumentation Module

Connection example 2



NX-D15: Controller module
 NX-CB1: Communications box
 NX-CL1: For communications adapter left connection
 NX-CR1: For communications adapter right connection
 SLP-NX: PC loader for Network Instrumentation Module

This example is for a non-ring connection.
 *: For more details on connections, refer to the instruction manual for Network Instrumentation Module.

Revision History (CP-UM-5481E)

Printed	Edn.	Revised pages	Description
Jan. 2008	1		
Sep. 2013	5	1, 2 6 End of a book Back cover	ARF990DA0000, for “Windows98/Me/2000/XP” → “for Windows” WARNING was added. Handling Precautions item added. AAS-511A-014-03 Information on China RoHS and KC mark was added.

Terms and Conditions

We would like to express our appreciation for your purchase and use of Azbil Corporation's products. You are required to acknowledge and agree upon the following terms and conditions for your purchase of Azbil Corporation's products (system products, field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

1. Warranty period and warranty scope

1.1 Warranty period

Azbil Corporation's products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.

In the case of products that Azbil Corporation has repaired for a fee, the repaired part only shall be warranted for three (3) months from the time of delivery to the location designated by the customer.

1.2 Warranty scope

In the event that Azbil Corporation's product has any failure attributable to azbil during the aforementioned warranty period, Azbil Corporation shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place.

Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:

- (1) Failure caused by your improper use of azbil product (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
- (2) Failure caused for other reasons than Azbil Corporation's product;
- (3) Failure caused by any modification or repair made by any person other than Azbil Corporation or Azbil Corporation's subcontractors;
- (4) Failure caused by your use of Azbil Corporation's product in a manner not conforming to the intended usage of that product;
- (5) Failure that the state-of-the-art at the time of Azbil Corporation's shipment did not allow Azbil Corporation to predict; or
- (6) Failure that arose from any reason not attributable to Azbil Corporation, including, without limitation, acts of God, disasters, and actions taken by a third party.

Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Azbil Corporation shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Azbil Corporation's products.

2. Ascertainment of suitability

You are required to ascertain the suitability of Azbil Corporation's product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:

- (1) Regulations and standards or laws that your Equipment is to comply with.
- (2) Examples of application described in any documents provided by Azbil Corporation are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
- (3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use

Although azbil is constantly making efforts to improve the quality and reliability of Azbil Corporation's products, there exists a possibility that parts and machinery may break down.

You are required to provide your Equipment with safety design such as fool-proof design, *1 and fail-safe design*2 (anti-flame propagation design, etc.), whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth. Furthermore, fault avoidance, *3 fault tolerance,*4 or the like should be incorporated so that the said Equipment can satisfy the level of reliability and safety required for your use.

*1. A design that is safe even if the user makes an error.

*2. A design that is safe even if the device fails.

*3. Avoidance of device failure by using highly reliable components, etc.

*4. The use of redundancy.

3. Precautions and restrictions on application

Azbil Corporation's products other than those explicitly specified as applicable (e.g. azbil Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area).

Any Azbil Corporation's products shall not be used for/with medical equipment.

The products are for industrial use. Do not allow general consumers to install or use any Azbil Corporation's product.

However, azbil products can be incorporated into products used by general consumers. If you intend to use a product for that purpose, please contact one of our sales representatives.

In addition,

you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual, etc. in case that you intend to use azbil product for any purposes specified in (1) through (6) below.

Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, fault avoidance, fault tolerance, and other kinds of protection/safety circuit design on your own responsibility to ensure reliability and safety, whereby preventing problems caused by failure or nonconformity.

- (1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
- (2) For use of specific purposes, such as:
 - * Nuclear energy/radiation related facilities
[For use outside nuclear energy controlled areas] [For use of Azbil Corporation's Limit Switch For Nuclear Energy]
 - * Machinery or equipment for space/sea bottom

- * Transportation equipment
[Railway, aircraft, vessels, vehicle equipment, etc.]
 - * Antidisaster/crime-prevention equipment
 - * Burning appliances
 - * Electrothermal equipment
 - * Amusement facilities
 - * Facilities/applications associated directly with billing
- (3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
 - (4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
 - (5) Machinery or equipment that may affect human lives, human bodies or properties
 - (6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety
4. Precautions against long-term use

Use of Azbil Corporation's products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification. Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Azbil Corporation's products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.
 5. Recommendation for renewal

Mechanical components, such as relays and switches, used for Azbil Corporation's products will reach the end of their life due to wear by repetitious open/close operations. In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used. Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc. as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Azbil Corporation's products every 5 to 10 years unless otherwise specified in specifications or instruction manuals. System products, field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts. For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.
 6. Other precautions

Prior to your use of Azbil Corporation's products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Azbil Corporation's products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.
 7. Changes to specifications

Please note that the descriptions contained in any documents provided by azbil are subject to change without notice for improvement or for any other reason. For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.
 8. Discontinuance of the supply of products/parts

Please note that the production of any Azbil Corporation's product may be discontinued without notice. For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts. For system products, field instruments, we may not be able to undertake parts replacement for similar reasons.
 9. Scope of services

Prices of Azbil Corporation's products do not include any charges for services such as engineer dispatch service. Accordingly, a separate fee will be charged in any of the following cases:

 - (1) Installation, adjustment, guidance, and attendance at a test run
 - (2) Maintenance, inspection, adjustment, and repair
 - (3) Technical guidance and technical education
 - (4) Special test or special inspection of a product under the conditions specified by you

Please note that we cannot provide any services as set forth above in a nuclear energy controlled area (radiation controlled area) or at a place where the level of exposure to radiation is equivalent to that in a nuclear energy controlled area.



基于SJ/T11364-2006「电子信息产品污染控制标识要求」
的表示式样

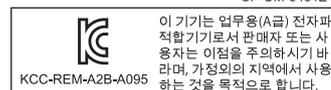
此标志表示电子信息产品的环保使用期限，适用于在中国销售的产品，其依据是2006年2月28日公布的“电子信息产品污染控制管理办法”与SJ/T11364-2006“电子信息产品污染控制标识要求”。只要遵守此产品相关的安全及使用注意事项，在从生产日期开始的标识年限内，便不会因产品中的有害物质发生泄漏或突然异变而对环境、人体或财产造成重大影响。正当使用产品后实施废弃处理时，请遵从电子信息产品的相关回收再利用法律法规。

有毒有害物质含有表示

零部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
箱体部分	×	○	○	○	○	○
门部分	×	○	○	○	○	○
印刷电路板单元	×	○	○	○	○	○
端子板部分	×	○	○	○	○	○
电源部分	×	○	○	○	○	○
附属品	×	○	○	○	○	○

○：表示该部件的所有均质材料中，该有毒有害物质含量均低于SJ/T11363-2006标准所规定的限量要求。
 ×：表示至少在该部件的一种以上的均质材料中，该有毒有害物质含量超过SJ/T11363-2006标准所规定的限量要求。
 注意：没有记载于零部件名称的部件的均质材料中，该有毒有害物质含量均低于SJ/T11363-2006标准所规定的限量要求。

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azbil

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Specifications are subject to change without notice. (09)

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