



SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 1. Introduction

## 1.1. Overview


This is the burner-control module for the RX series. This module, working in combination with the burner interlock module, is a flame safeguard device that operates an industrial combustion furnace automatically and safely.

## 1.2. Terms

Term	Description
RX-L	RX-L series Burner Interlock Module
RX-R	RX-R series Burner Control Module (described in this specification)
PLC	Programmable logic controller
DCS	Distributed control system
Master station	DCS or PLC
Zone RX-L	An RX-L that supervises interlock conditions for one zone. "RX-L" in this document refers to a zone RX-L.
Interrupted pilot burner	Ignites the main burner for the main trial and automatically stops after the main trial.
Continuous pilot burner	Used for main burner ignition, but burns continuously regardless of whether the main burner is ignited.
Intermittent pilot burner	Ignites the main burner in the main trial, and continues to burn until the main burner stops.
Independent supervision	Pilot burner and main burner are monitored by separate flame detectors.
Radiant tube	Combustion inside heat-resistant steel or ceramic tubes heats work-pieces by radiation. This control requires the use of explosion-resistant steel tubes equipped with a reliable ignition source (in accordance with JIS B 8415).
Batch operation	Combustion starts and stops once or more within 24 hours

## 1.3. Main features

- Permanent (continuous) operation, running 24 hours or more, is available with the RX-R4xC, in combination with a UV sensor with shutter.
- Batch operation is available with the RX-R2xC, using an AUD100 series flame detector for batch use.
- Supports all combustion modes.
- Independent flame supervision for pilot and main burners, using two RX-R units.
- General purpose interlock input, dry contact type. Input functions are set by a PC loader.
- External monitor outputs (open collector).
- Status display (LED, 7-segment LED)
- Module connection (side by side) with interlock module.
- Data communication to master device via interlock module.

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形 番 MODEL	R X - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名 称 NAME	Burner Control Module	
01	~	日付 DATE H23.2.8	図 番 NO. A D 1 6 3 1 7 E
Page 改番 REV.	Rev. 来 歴 RECORD	日 付 DATE	担 当 BY
		検 閲 APPD.	REV 06
			2 / 19

SP.NO.

# Azbil Corporation

# 製品仕様書 SPECIFICATIONS

## 2. Product selection

### 2.1. Model number

RX-R4x series (for continuous operation)


RX-R2x series (for batch operation)

### 2.1.1. Model number table

Model number table (UV sensor model)											
Family	Series	Flame sensor	(Fixed)	IG, MTT	FFRT	Power to load	Power to flame sensor	Other	Description		
RX-	R20								Selectable combustion mode		
	R22								Direct ignition (external relay-driven)		
	R40								Selectable combustion mode		
	R42								Direct ignition (external relay-driven)		
	R44								Independent supervision		
	R46								Independent supervision (external relay-driven)		
			C						AUD300/500 (R4xC), AUD100 series (R2xC)		
				0					(Fixed)		
					1				IGT=5 s or 10 s / MTT=5 s		
						2			Max 2 seconds (nominal 1.5 s)		
						3			Max 4 seconds (nominal 3 s)		
							1		AC 100 V		
							2		AC 200 V		
							4		AC 110 V		
						6		AC 220 V			
							0	Same as power to load			
							0	No inspection data			
							D	With inspection data			

#### Abbreviations:

- FR: Flame relay
- FFRT: Flame response time (flame failure response time)
- IGT: Ignition trial (pilot ignition safety time)
- MTT: Main trial time (main ignition safety time)

					作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~			
	06	~			検図 CHK. Morikawa	形番 MODEL	RX - R4x / R2x				
	05	~									
	03	~			認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module				
	02	~									
	01	~									
Page	Rev.	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.	日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06	3 / 19

SP.NO.

# Azbil Corporation

# 製品仕様書 SPECIFICATIONS

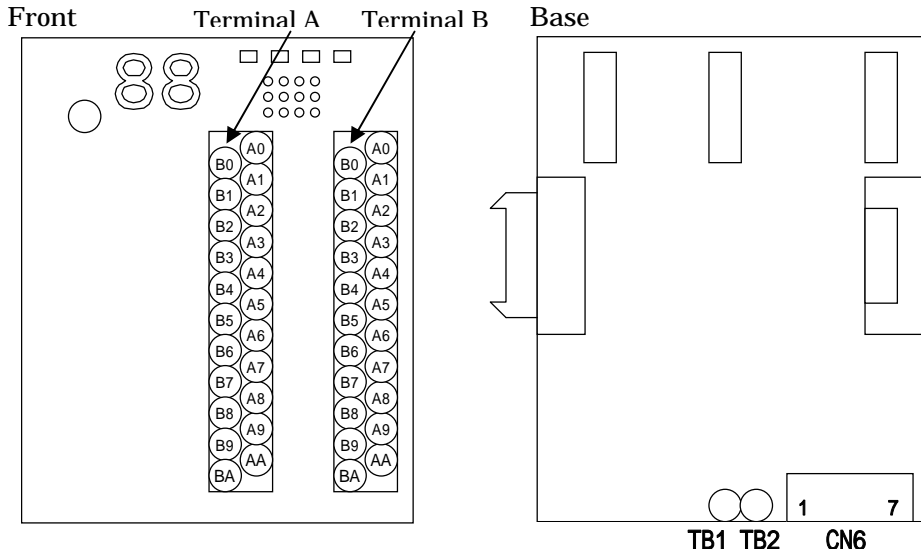
Model number table (Flame rod sensor model)										
Family	Series	Flame sensor	(Fixed)	IG, MTT	FFRT	Power to load	Power to flame sensor	Other	Description	
RX-	R20								Selectable combustion mode	
	R22								Direct ignition (external relay-driven)	
	R40								Selectable combustion mode	
	R44								Independent supervision	
			B						Flame rod	
				0					(Fixed)	
					1				IGT=5 s or 10 s / MTT=5 s	
						3			Max 4 seconds (nominal 3 s)	
							1		AC 100 V	
							2		AC 200 V	
							4		AC 110 V	
							6		AC 220 V	
								0	Same as power to load	
								0	No inspection data	
								D	With inspection data	

Abbreviations:

- FR: Flame relay
- FFRT: Flame response time (flame failure response time)
- IGT: Ignition trial (pilot ignition safety time)
- MTT: Main trial time (main ignition safety time)

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R4x / R2x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
Page 06	Rev. 改番 REV.	来歴 RECORD	日付 DATE
		担当 BY	検閲 APPD.
	日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E
		REV	06
			4 / 19

2.2. Terminals



Module front terminals

No	Terminal A	Terminal B
A0	AC for load (H)	Monitor output (M-1)
A1	Unused	Monitor output (M-2)
A2	COM-H for external relay drive	Monitor output (M-3)
A3	Unused	Monitor output (M-4)
A4	AC for load (G)	Monitor output (M-5)
A5	Unused	Monitor output (M-6)
A6	Unused	Monitor output (M-7)
A7	Flame sensor (G)	Monitor output (M-8)
A8	Unused	Monitor output (M-9)
A9	Shutter output (S2)*1	Monitor output (M-10)
AA	Flame voltage monitor (FV-)	Monitor output (M-11)
B0	Ignition transformer (IG)	Start input (Start +)
B1	Pilot valve (PV)	Start input (Start -)
B2	Main valve (MV)	Interlock input (IN1)
B3	Unused	Interlock input (IN2)
B4	Common (COM-G)	Interlock input (IN3)
B5	Unused	Interlock input (IN4)
B6	Flame sensor (F)	Interlock input common (COM)
B7	Unused	Reset (RESET)
B8	Unused	Reset input common (COM)
B9	Shutter output (S1)*1	Power input for monitor output (24V)
BA	Flame voltage monitor (FV+)	Power input for monitor output (GND)

\*1. RX-R4xC only.

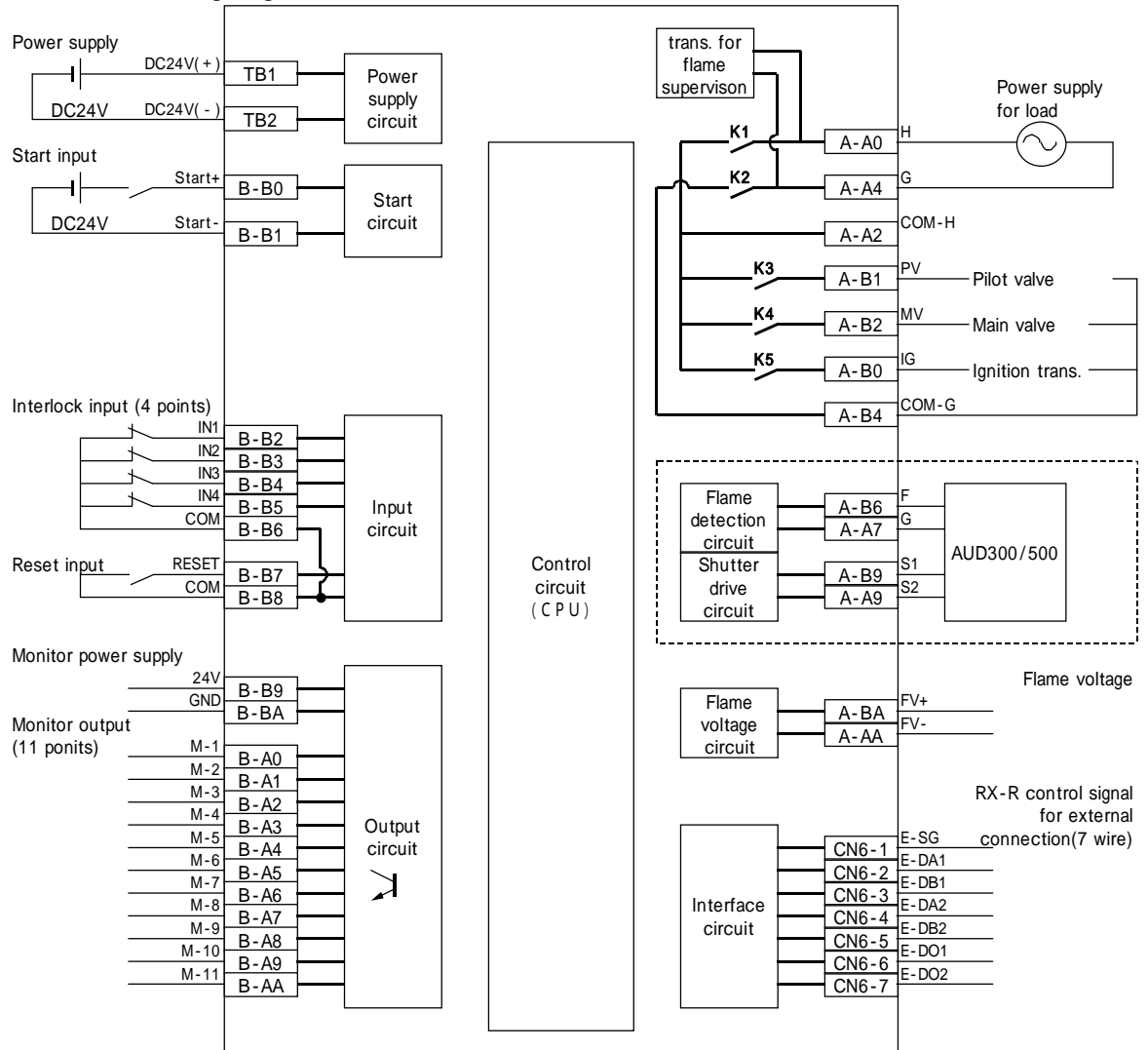
Base Terminals

No	TB1, 2 (Power)	CN6 (RX-R control signal)
1	24 Vdc	RX-R control signal (E-SG)
2	0 V	RX-R control signal (E-DA1)
3	-	RX-R control signal (E-DB1)
4	-	RX-R control signal (E-DA2)
5	-	RX-R control signal (E-DB2)
6	-	RX-R control signal (E-D01)
7	-	RX-R control signal (E-D02)

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL RX - R 4 x / R 2 x		
認可 APPD. Yamada Tetsuya	名称 NAME Burner Control Module		
Page 01	Rev. ~	日付 DATE H23.2.8	図番 NO. A D 1 6 3 1 7 E
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
		検閲 APPD.	REV. 06
			5/19

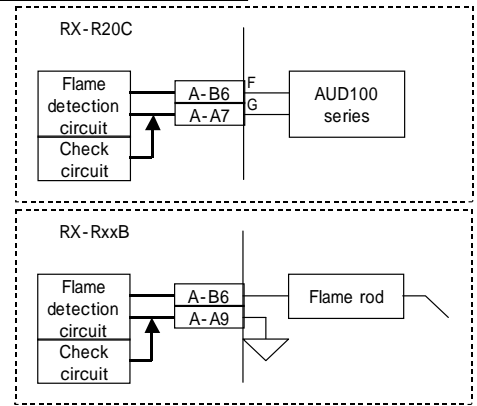
SP.NO.

2.3. Terminal wiring diagram



Cautions:

- The reset input cannot be shared with another RX-R reset input. Use reset input only for a single module.
- The COM terminal cannot be shared with another RX-R COM.



作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
02	~		
01	~		
日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06
			6 / 19

SP.NO.

# Azbil Corporation

## 製品仕様書 SPECIFICATIONS

### 2.4. Compatible controller

Name	Model
RX-L (Burner interlock module)	RX-L80/L90 series

### 2.5. Tolerances

Tolerances for timing and operating points are  $\pm 20\%$  if not otherwise specified.

### 2.6. Environment specifications

Environment specifications for timing and switching points are as follows if not otherwise specified.

Ambient temperature: -20 to +55 °C. Relative humidity: 45–85 %


### 2.7. Related document

Document name (for RX-L)	Document number
Burner Interlock Module Product Specifications	AD16332E

### 2.8. Room temperature and humidity (including flame detector)

Room temperature: 5–35 °C

Room humidity: 45–85 % RH

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
Page 改番 REV.	Rev. 来歴 RECORD	日付 DATE	担当 BY
01	~		
日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06
			7/19

Page

Rev.

改番  
REV.

来歴  
RECORD

日付  
DATE

担当  
BY

検閲  
APPD.

日付 DATE  
H23.2.8

図番  
NO.

A D 1 6 3 1 7 E

REV  
06

7/19

SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 3. Specifications

## 3.1. General specifications

Item	Description
Dimensions	134.2 (D) × 80.0 (W) × 105.3 (H) mm
Mass	Approx. 600 g
Case color	Black
Case material	Denatured PPE
Structure	Base and detachable module
Mounting method	Vertical (on DIN rail or direct mounting to panel by screw holes on base)

## 3.2. Environment specifications

Item	Description
Standard conditions	Ambient temperature 23 ± 2 °C Ambient humidity 60 ± 5 % RH (without condensation) Rated power supply 24 Vdc Vibration resistance 0 m/s <sup>2</sup> Shock resistance 0 m/s <sup>2</sup> Mounting Vertical (on DIN rail).
Transportation and storage conditions	Ambient temperature -20 to 70 °C Ambient humidity 5–95 % RH (without condensation) Vibration resistance 0–9.8 m/s <sup>2</sup> (back and forth from 10 to 150 Hz every 5 min, in X, Y and Z directions for 2 h each) Shock resistance 0–300 m/s <sup>2</sup> Package drop test Drop height 60 cm, (1 corner, 3 edges, 6 sides, free drop, JIS Z 0200 level II)
Operating conditions	Ambient temperature -20 to 55 °C Ambient humidity 10–90 % RH (without condensation) Allowable voltage 21.6–26.4 Vdc Vibration resistance 0–3.2 m/s <sup>2</sup> (back and forth from 10 to 150 Hz every 5 min, in X, Y and Z directions for 2 h each) Shock resistance 0–9.8 m/s <sup>2</sup> Mounting angle Reference plane ± 10 ° Dust 0.3 mg/m <sup>3</sup> max. Corrosive gas None

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	R X - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
01	~	日付 DATE H23.2.8	図番 NO. A D 1 6 3 1 7 E
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
		検閲 APPD.	REV. 06
			8/19

Page

Rev.

01

改番  
REV.来歴  
RECORD日付  
DATE担当  
BY検閲  
APPD.日付 DATE  
H23.2.8図番  
NO.

A D 1 6 3 1 7 E

REV.  
06

8/19



SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 3.3. Electrical specifications

Item	Description
Rated supply voltage	24 Vdc
Allowable supply voltage	21.6~26.4 Vdc (When AUD300 is used with RX-R4xC, the ambient temperature of AUD300 is prescribed by Chapter 3.6.1.)
Power consumption	10 W max.
Dielectric strength	DC terminals: 500 Vac for 1 min or 600 Vac for 1 s <ul style="list-style-type: none"> <li>• between 24 Vdc power terminals and input function terminals</li> <li>• between 24 Vdc power terminals and monitor output connector</li> <li>• between 24 Vdc power terminals and RX-R control signal terminal</li> </ul> AC terminals: 1500 Vac for 1 min or 1800 Vac for 1 s <ul style="list-style-type: none"> <li>• between relay output, AC power terminals, and DC terminals and connectors</li> </ul>
Insulation resistance	50 MΩ or more with 500 Vdc megger <ul style="list-style-type: none"> <li>• between relay output, AC power terminals, and DC terminals and connectors</li> </ul>
Product life	7 years or 100 000 relay operations (at 25 °C, rated power voltage, and 45~85 % relative humidity)

## 3.4. Input

## 3.4.1. Start input

Item	Description
Symbol	Start
Type	Voltage input between Start+ and Start- terminals
Rated input voltage	24 Vdc
Rated input current	10 mA

## 3.4.2. Reset input

Item	Description
Symbol	RESET
Type	Non-voltage contact input between RESET and COM terminals
Applied voltage, current	24 Vdc, 10 mA
Allowable contact resistance at ON	250 Ω or less
Signal meaning	Off: No reset input On: Reset input

## 3.4.3. Interlock input

Item	Description
Symbol	IN1 to IN4 (4 inputs)
Type	Non-voltage contact input, between each input and COM terminal
Applied voltage, current	24 Vdc, 10 mA
Allowable contact resistance at ON	250 Ω or less
Signal meaning	Off: Interlock operation, no control input On: Interlock normal, control input

Page Rev.

改番  
REV.来歴  
RECORD日付  
DATE担当  
BY検閲  
APPD.作成 DR.  
KumazawaSCALE  
~TOL. UNLESS NOTED  
~検図 CHK.  
Morikawa形番  
MODEL

RX - R 4 x / R 2 x

認可 APPD.  
Yamada  
Tetsuya名称  
NAME

Burner Control Module

日付 DATE  
H23.2.8図番  
NO.

A D 1 6 3 1 7 E

REV  
06

9 / 19

SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 3.4.4. Power input for load

Item	Description
Symbol	H, G
Type	AC power input
Power input range	85 to 110 % of 100/110/120/200/220/230 Vac
Note	Power input for load output use and flame detector

## 3.5. Output

## 3.5.1. Relay output

Item	Description
Symbol	IG
Type	Voltage contact output, load OFF by both sets of contacts
Output voltage	Voltage from load power supply terminals (H, G)
Contact capacity	300 VA
Other	With relay contact welding diagnostic function


Item	Description
Symbol	PV, MV
Type	Voltage contact output, load OFF by both sets of contacts
Output voltage	Voltage from load power supply terminals (H, G)
Contact capacity	200 VA
Other	With relay contact welding diagnostic function

## 3.5.2. Monitor output

Item	Description
Symbol	M-1 to M-11 (11 outputs)
Output type	Open collector sink output (NPN)
Output current	Max 0.1 A each, 0.8 A per module
Leakage current	1 mA or less
Maximum voltage	30 Vdc
ON voltage drop	1 V max.

## 3.5.3. Flame voltage monitor output

Item	Description
Output voltage	0-5 V
Wiring specification	For signal lines use wire with indoor PVC insulation ("IV wire," JIS C3307), with a cross-sectional area of 0.75mm <sup>2</sup> or more, not more than 10 m long. Input impedance of connected device: 100 kΩ or more.

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
Page 01	Rev. ~	日付 DATE H23.2.8	図番 NO. A D 1 6 3 1 7 E
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
		検閲 APPD.	REV 06
			10/19

SP.NO.

3.6. Flame detector

Flame sensor specifications at room temperature, room humidity and rated voltage

Flame sensor	Type	Specification	Model number
AUD300/500	Flame voltage	Flame establishment: 1.5 V or more Flame out (no flame): 0.6 V or less Recommended: Stable 2.0 V or more	RX-R4*C*****
	Flame response (when flame voltage = 3 V)	Max. 4 s (nominal 3 s)	RX-R4*C**3*****
		Max. 2 s (nominal 1.5 s)	RX-R4*C**2*****
	Flame voltage range	0-5 V	RX-R4*C*****
AUD100 series	Flame voltage	Flame establishment: 1.5 V or more Flame out (no flame): 0.6 V or less Recommended: Stable 2.0 V or more	RX-R2*C*****
	Flame response (when flame voltage = 3 V)	Max. 4 s (nominal 3 s)	RX-R2*C**3*****
		Max. 2 s (nominal 1.5 s)	RX-R2*C**2*****
	Flame voltage range	0-5 V	RX-R2*C*****
Flame rod	Flame response (when flame voltage = 2 V)	Max. 4 s (nominal 3 s)	RX-R**B**3*****
		Max. 2 s (nominal 1.5 s)	RX-R**B**2*****
	Flame voltage range	Flame establishment: 1.0 V or more	RX-R**B*****
		Flame out (no flame): 0.2 V or less	

3.6.1. Ambient temperature of AUD300 (with RX-R4xC)

Flame sensor	Ambient temperature	Comments
AUD300	-20 ~ 100	Under a stop ( With no flame detection )
	-20 ~ 120	Under operation (under flame detection)

When the mounting postures of AUD300 are +45 degrees - +90 degrees (the following figure slash part), please use it on conditions below.

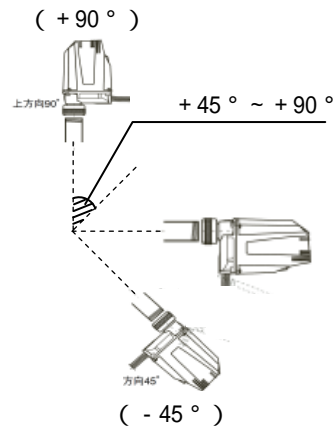
【Ambient temperature of AUD300】 -20 ~ 70

or

【Power supply voltage of RX-R4xC】 DC22.8V ~ DC26.4V

In addition, under flame detection

Ambient temperature of AUD300 -20 ~ 120



				作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~				
				検図 CHK. Morikawa	形番 MODEL	RX - R 4 x / R 2 x					
				認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module					
Page	Rev.	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.	日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06	11/19

SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 3.7. Wiring type, maximum wire length

Signal name	Type	Max. length
Interlock input (IN1-IN4)	0.3-1.25 mm <sup>2</sup> (AWG 22-16)	200 m
Start input (Start)	0.3-1.25 mm <sup>2</sup> (AWG 22-16)	200 m
Reset input (RESET)	0.3-1.25 mm <sup>2</sup> (AWG 22-16)	10 m
Monitor output (M-1 to M-11)	Soldered connection: 0.25 mm <sup>2</sup> max. (AWG 23 or less) Solderless terminal: 0.08-0.2 mm <sup>2</sup> (AWG 28-24)	100 m
RX-R control line (E-XX)	0.2-1.5 mm <sup>2</sup> (AWG 28-14)*	50 m
24 Vdc (V+, V-)	0.3-1.25 mm <sup>2</sup> (AWG 22-16)	-
Power supply input (H, G)	0.75 mm <sup>2</sup> (0.18 mm dia. 30 cores) or more (JIS C 3306)	-
Relay output (PV, MV, IG)	0.75 mm <sup>2</sup> (0.18 mm dia. 30 cores) or more (JIS C 3306)	-
AUD300/500 (F, G, S1, S2)	600 V vinyl-insulated wire ("IV wire," JIS C3307), 2 mm <sup>2</sup>	200 m
AUD100/110 (F, G)	600 V vinyl-insulated wire ("IV wire," JIS C3307), 2 mm <sup>2</sup>	200m
Flame rod (F, G)	RG-11/U equivalent: high-frequency coaxial cable 5C2V, 7C2V (antenna cable for color television)	30m

\*JCS4364 instrument cable (twisted shielded cable for instrumentation), 8 wires (4 pairs)

## 3.8. Connectors for wiring

RX-R control signal connector (CN6)

Manufacturer: Weidmuller

Model: BL3.5/7

Compatible wire: 0.2-1.5 mm<sup>2</sup> (AWG 28-14)

## 3.9. Certificate

Gas Appliance Directive(CE) : 0063CN6671

## 3.10. Related standard

JIS B 8415:2008, "General safety code for industrial combustion furnaces"

					作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~			
					検図 CHK. Morikawa	形番 MODEL	R X - R 4 x / R 2 x				
					認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module				
Page	Rev.	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.	日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06	12/19

SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 4. Handling Precautions

## 4.1. Warnings

- (1) Use the RX-R within the stated specifications (electrical, environmental, and other). Usage outside of specifications may result in overheating, smoke, or fire.
- (2) For the RX-series, commercial power supply is input to the front terminal block. In keeping with JIS standards, an electric shock warning and the following cautions should be displayed where the RX-series device is mounted.


[On the circuit breaker]

- Electric shock or short circuit can result in death or serious injury. Cut off the main circuit breaker when installing or inspecting.

[Where the RX-series device is mounted]

Observe the following cautions to prevent fire and electric shock.

- Be sure to read the manuals describing installation and use.
  - Do not make unauthorized modifications.
  - After completion of testing, make sure to correctly set to the prescribed mode.
  - Close the control panel door securely and keep it locked.
  - Do not attach or remove the terminal block while the power is on.
  - Do not install or remove this burner control module while the power is on.
  - Do not open the terminal block cover while the power is on.
- (3) This control module is equipped with functions that are extremely important for the safe operation of combustion equipment. Be sure to use it correctly, following the user's manual.
  - (4) Do not allow wire clippings, metal shavings, water, etc. to enter the case.
  - (5) To prevent electric shock, do not touch power terminals or other electrically charged parts.
  - (6) Do not connect or disconnect the module while the power is on. Cut off the power before connecting modules with the side-connector, attaching or detaching the module and the base, or attaching/detaching the terminal block. Otherwise, touching an electrical component or internal circuit may cause electric shock.
  - (7) There is no main power switch for the module. Provide an easily accessed power-off device in a control cabinet.
  - (8) Use insulated crimp terminals suitable for M3 screws when wiring the terminals.
  - (9) Before wiring, be sure to turn off the power to this control module and all connected devices.
  - (10) To prevent electric shock through accidental contact with terminals, do not open the terminal block cover while the power is on.
  - (11) After wiring, check that the cover is closed and locked. If the cover is open, touching a component may cause electric shock.
  - (12) Do not use a terminal block with a damaged cover. Replace as soon as possible with a new terminal block.
  - (13) If it is necessary during maintenance or troubleshooting to measure the flame voltage, it is best not to measure directly from the terminal block of this module. Instead, use a previously wired external terminal block located inside the control cabinet. In this way the flame voltage can be measured without risk of electric shock from the module's higher voltage terminals.
  - (14) Total power consumption of all connected modules should not exceed 80 W.

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R 4 x / R 2 x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
01	~	日付 DATE H23.2.8	図番 NO.
改番 REV.	来歴 RECORD	日付 DATE	担当 BY
Page	Rev.	検閲 APPD.	REV
			06
			13/19

Page

Rev.

01


改番  
REV.来歴  
RECORD日付  
DATE担当  
BY検閲  
APPD.日付 DATE  
H23.2.8図番  
NO.

A D 1 6 3 1 7 E

REV

06

13/19

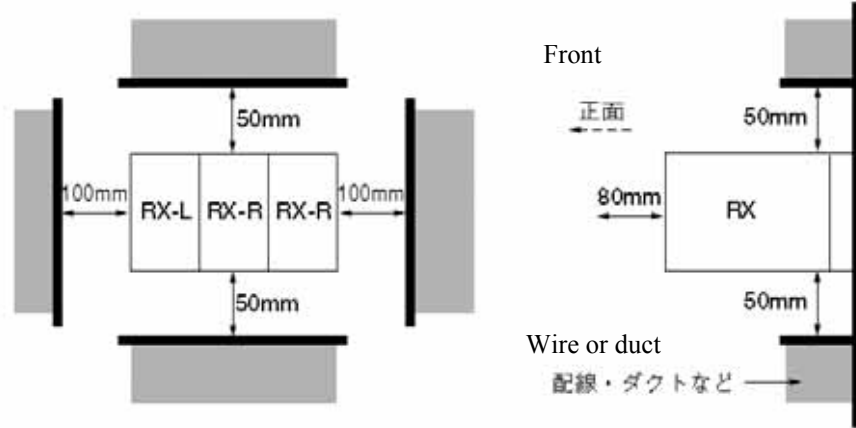
SP.NO.	<b>Azbil Corporation</b>				<b>製品仕様書</b> <b>SPECIFICATIONS</b>				
	<p>(15) Use one electric power source for all connected modules. Do not short-circuit the power terminals of the connected modules.</p> <p>(16) Do not use free terminals on the control module to make other connections.</p> <p>(17) Do not short-circuit the output. Doing so may cause device failure.</p> <p>(18) Because of the danger of a power surge due to lightning, the use of a surge protector is recommended.</p> <p>(19) Be sure to check connections after wiring. Incorrect wiring can cause damage or malfunction. If the control output is accidentally short-circuited once, do not simply reuse it, even if it seems to work properly, because there is a high risk of relay contact welding.</p> <p>(20) If the combustion equipment is locked out and restarted, check each item on the checklists in the TRIAL-RUN ADJUSTMENT chapter of the user's manual.</p> <p>(21) If lockout occurs, be sure to do a prepurge before restarting the system. If accumulated unburned gas in the combustion chamber and ducts is not vented, burner ignition may cause an explosion.</p> <p>(22) Carry out the pilot turndown test carefully. If the flame sensor is able to detect a pilot flame that is too small to ignite the main burner, this control module will not be able to recognize flame failure of the main burner. In this case fuel would continue to be supplied, causing a serious explosion hazard.</p> <p>(23) During the trial-run testing, check that all interlock inputs work correctly.</p> <p>(24) Do not start regular combustion unless the adjustment and testing for this device and the testing specified by the combustion equipment manufacturer have been completed.</p> <p>(25) For burner startup and shutdown with multi-burner instrumentation (multiple RX-Rs in the zone), observe the following caution. Immediately after lockout because of ignition failure or flame failure of some burners, the furnace may be full of unburned fuel gas. Use appropriate caution before starting another burner.</p> <p>(26) Check the combustion equipment periodically, following the instructions in the manufacturer's manual.</p> <p><b>4.2. Cautions</b></p> <p>(1) Do not mount the control module in the following kinds of places:</p> <ul style="list-style-type: none"> <li>• In the presence of chemicals or corrosive gas, such as ammonia, sulfur, chlorine, ethylene compounds, acids, or others.</li> <li>• Where it is exposed to water drops or dampness.</li> <li>• Where it is exposed to high temperatures.</li> <li>• Where vibration continues for an extended period of time.</li> </ul> <p>(2) Install the control module in a place that is not accessible to unauthorized persons, such as inside a control cabinet.</p> <p>(3) This control module has a protective structure equivalent to IP20. Take measures to protect it from dust. In particular, if the system is designed to comply with CE/CSA/UL standards, be sure to install the module in a control cabinet with IP54 or equivalent protection.</p> <p>(4) Mounting, wiring, maintenance, inspection and adjustment should be carried out by a trained and experienced person who has knowledge and technical skills related to combustion equipment and flame safeguard equipment.</p>								
					作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~	
					検図 CHK. Morikawa	形 番 MODEL		R X - R 4 x / R 2 x	
					認可 APPD. Yamada Tetsuya	名 称 NAME		Burner Control Module	
Page	Rev.	01	~		日付 DATE H23.2.8	図 番 NO.	A D 1 6 3 1 7 E	REV 06	14/19
		改番 REV.	来 歴 RECORD	日 付 DATE	担当 BY	検 閲 APPD.			



SP.NO.

4.3. Precautions for mounting

- (1) For good air intake and convenient dismounting, wiring, and maintenance, leave adequate space around the module as follows: 50 mm above and below, 100 mm on the right and left sides, and 80 mm in front. Mount at least 100 mm away from another device or another row of RXs. Do not mount above a heat-radiating device such as a power supply.



- (2) To insure safety, mount the control module in a grounded metal control cabinet.
- (3) For effective heat radiation, as well as convenient mounting and replacement, leave at least 50 mm of space from wiring ducts, etc.
- (4) Be sure not to pull on wires connected to the control module. Doing so may cause connector or control module failure.
- (5) The power to all control modules should be turned ON or OFF at the same time. Otherwise a malfunction may occur.

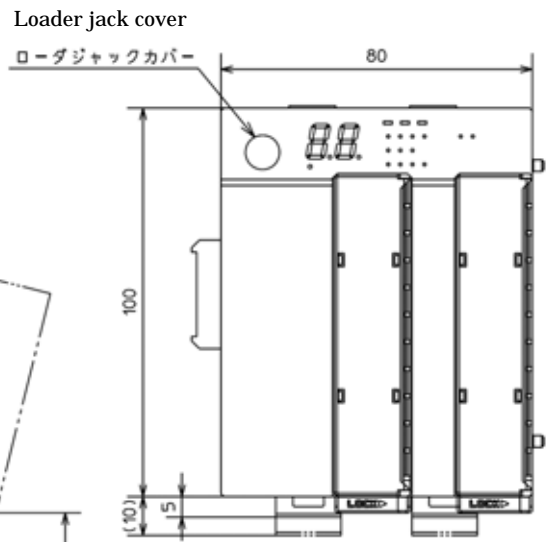
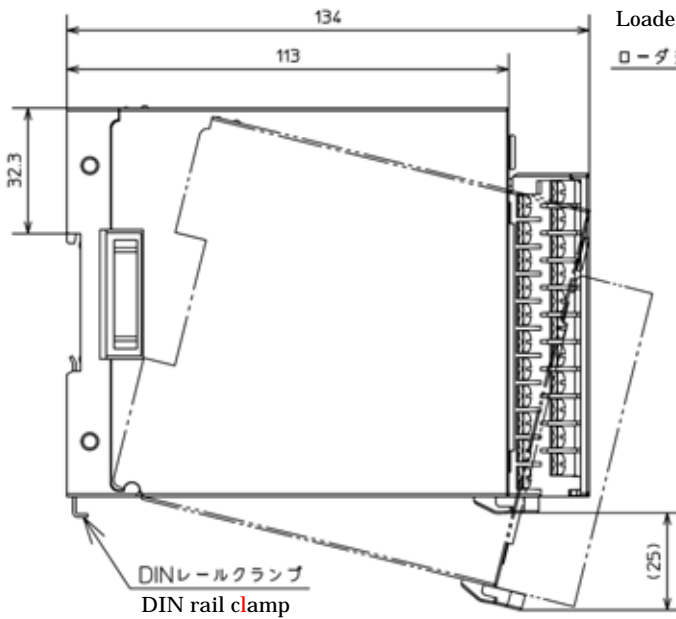
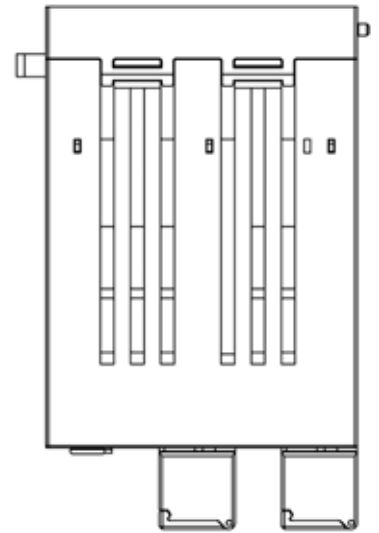
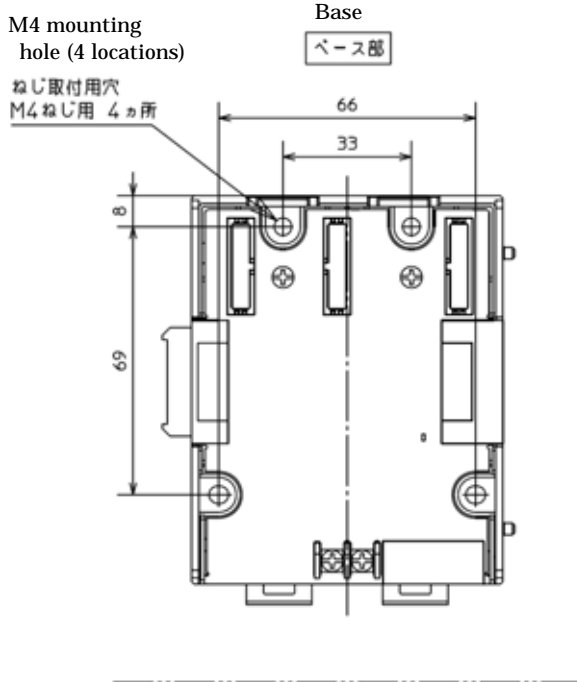
作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~							
検図 CHK. Morikawa	形番 MODEL RX - R 4 x / R 2 x									
認可 APPD. Yamada Tetsuya	名称 NAME Burner Control Module									
Page Rev.	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.	日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06	16 / 19

01	~				
----	---	--	--	--	--



SP.NO.

5. External dimensions and packaging  
5.1. External dimensions



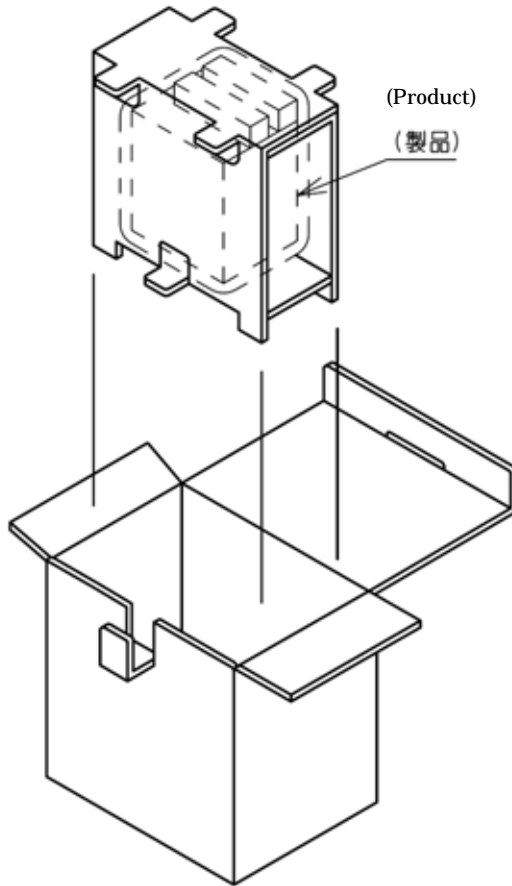
Page	Rev.	01	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.
------	------	----	---------	-----------	---------	-------	----------

作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R4x / R2x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
日付 DATE H23.2.8	図番 NO.	A D 1 6 3 1 7 E	REV 06 / 17 / 19

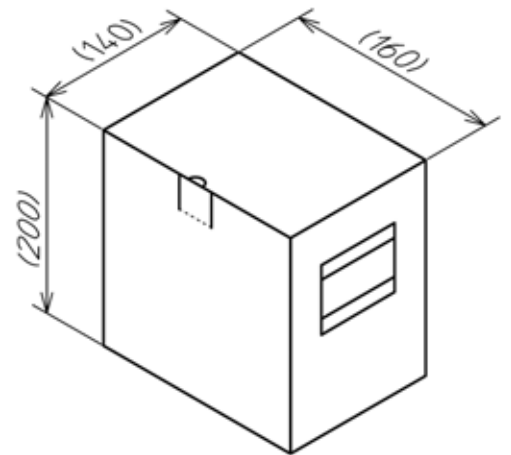
SP.NO.

5.2. Packaging

Interior  
内装図



Exterior  
外表図



作成 DR. Kumazawa		SCALE ~	TOL. UNLESS NOTED ~
検図 CHK. Morikawa	形番 MODEL	RX - R4x / R2x	
認可 APPD. Yamada Tetsuya	名称 NAME	Burner Control Module	
Page Rev.	改番 REV.	来歴 RECORD	日付 DATE
	01	~	
		担当 BY	検閲 APPD.
		日付 DATE H23.2.8	図番 NO.
		A D 1 6 3 1 7 E	REV 06
			18/19

SP.NO.

Azbil Corporation

製品仕様書  
SPECIFICATIONS

## 6. Inspection data sheet


改 03  
rev.検査成績書  
INSPECTION DATA

品名 Description	バーナコントロールモジュール	デートコード Date Code	1036
形番 Model No.	RX-R40C01310D	シリアルNo. Serial No.	23079

項目 No.	検査項目および規格 Inspection Items and Standard		検査結果 Result
1.	外観、表示 Appearance, Marking		合格 Good
2.	ローダ通信 Loader Communication Port		合格 Good
3.	RX-R制御信号 RX-R Control Signal		合格 Good
4.	起動入力 Start Input		合格 Good
5.	インターロック入力 & リセット入力 Interlock Input & Reset Input		合格 Good
6.	モニタ出力 Monitor Output		合格 Good
7.	リレー出力(パイロットバルブ出力、メインバルブ出力、点火トランス出力) Relay Output (Pilot Valve Output, Main Valve Output, Ignition Output)		合格 Good
8.	パイロット点火安全時間 First Safety Time		合格 Good
	規定タイミング [秒] Standard Time [sec]	許容差 [秒] Tolerance [sec]	計測結果 [秒] Measured Time [sec]
	9	± 1	8.8
9.	メイン点火安全時間 Second Safety Time		合格 Good
	規定タイミング [秒] Standard Time [sec]	許容差 [秒] Tolerance [sec]	計測結果 [秒] Measured Time [sec]
	4.5	± 0.5	4.0
10.	フレイムレスポンス Flame Reponse Time		合格 Good
	規定タイミング [秒] Standard Time [sec]	計測結果 [秒] Measured Time [sec]	
	3 ± 1	3.1	
11.	フレイム感度 & フレイム電圧出力 Flame Sensitive & Flame Voltage Output		合格 Good
	状態 Status	フレイム電圧規格 [V] Standard Flame Voltage Output [V]	計測結果 [V] Measured Voltage [V]
	着火 Ignition	1.5 以下 or less	1.10
	消炎 Inflammation	0.6 以下 or less	0.20
12.	外部フレイム信号入出力 External Flame Signal Input & Output		合格 Good
13.	絶縁抵抗 & 耐電圧 Insulation Resistance & Dielectric Strength		合格 Good

選択可能な設定項目については、代表的な設定値における計測結果を記載しています。

検査年月日 Date Tested	2010/09/14	室温 Room Temp.	24℃
担当 Inspector		承認 Approved	

アズビル株式会社  
Azbil Corporation作成 DR. Kumazawa  SCALE ~ TOL. UNLESS NOTED ~

検図 CHK. Morikawa 形番 MODEL RX - R 4 x / R 2 x

認可 APPD. Yamada Tetsuya 名称 NAME Burner Control Module

日付 DATE H23.2.8 図番 NO. A D 1 6 3 1 7 E REV 06 19/19

Page Rev.

改番 REV. 03 01 来歴 RECORD 日付 DATE

担当 BY 検閲 APPD.

SP.NO.	<b>Azbil Corporation</b>		<b>製品仕様書</b> <b>SPECIFICATIONS</b>			
	<b>Terms and Conditions</b>					
	<p>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.</p>					
	<p><b>1 Warranty period and warranty scope</b></p>					
	<p><b>1.1 Warranty period</b></p> <p>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.</p>					
	<p><b>1.2 Warranty scope</b></p> <p>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.</p> <p>Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:</p>					
	<p>(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.);</p> <p>(2) Failure caused for other reasons than Azbil Corporation's product;</p> <p>(3) Failure caused by any modification or repair made by any person other than Azbil Corporation or Azbil Corporation's subcontractors;</p> <p>(4) Failure caused by your use of Azbil Corporation's product in a manner not conforming to the intended usage of that product;</p> <p>(5) Failure that the state-of-the-art at the time of Azbil Corporation's shipment did not allow Azbil Corporation to predict; or</p> <p>(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.</p> <p>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.</p>					
	<p><b>2 Ascertainment of suitability</b></p> <p>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:</p>					
	<p>(1) Regulations and standards or laws that your Equipment is to comply with.</p> <p>(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.</p> <p>(3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use</p> <p>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.</p> <p>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.</p> <p>*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.</p>					
	<p><b>3 Precautions and restrictions on application</b></p> <p>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).</p> <p>Any Azbil Corporation's products shall not be used for/with medical equipment.</p> <p>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.</p> <p>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.</p> <p>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.</p>					
頁	改番	改番	来歴	日付	担当	照査
	REV.		RECORD	DATE	BY	CHK.

SP. NO.	Azbil Corporation		製品仕様書 SPECIFICATIONS			
			<p>(1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals</p> <p>(2) For use of specific purposes, such as:</p> <ul style="list-style-type: none"> <li>* Nuclear energy/radiation related facilities [For use outside nuclear energy controlled areas] [For use of Azbil Corporation's Limit Switch For Nuclear Energy]</li> <li>* Machinery or equipment for space/sea bottom</li> <li>* Transportation equipment [Railway, aircraft, vessels, vehicle equipment, etc.]</li> <li>* Antidisaster/crime-prevention equipment</li> <li>* Burning appliances</li> <li>* Electrothermal equipment</li> <li>* Amusement facilities</li> <li>* Facilities/applications associated directly with billing</li> </ul> <p>(3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability</p> <p>(4) Facilities that are to comply with regulations of governmental/public agencies or specific industries</p> <p>(5) Machinery or equipment that may affect human lives, human bodies or properties</p> <p>(6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety</p> <p><b>4 Precautions against long-term use</b></p> <p>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.</p> <p>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.</p> <p><b>5 Recommendation for renewal</b></p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p><b>6 Other precautions</b></p> <p>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.</p> <p><b>7 Changes to specifications</b></p> <p>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.</p> <p>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.</p> <p><b>8 Discontinuance of the supply of products/parts</b></p> <p>Please note that the production of any Azbil Corporation's product may be discontinued without notice.</p> <p>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.</p> <p><b>9 Scope of services</b></p> <p>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:</p> <ol style="list-style-type: none"> <li>(1) Installation, adjustment, guidance, and attendance at a test run</li> <li>(2) Maintenance, inspection, adjustment, and repair</li> <li>(3) Technical guidance and technical education</li> <li>(4) Special test or special inspection of a product under the conditions specified by you</li> </ol> <p>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.</p>			
頁	改番	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	照査 CHK.

AAS-511A-014-04