Ionizer (Air Push Type)
KS1

CSM_KS1_DS_E_2_2

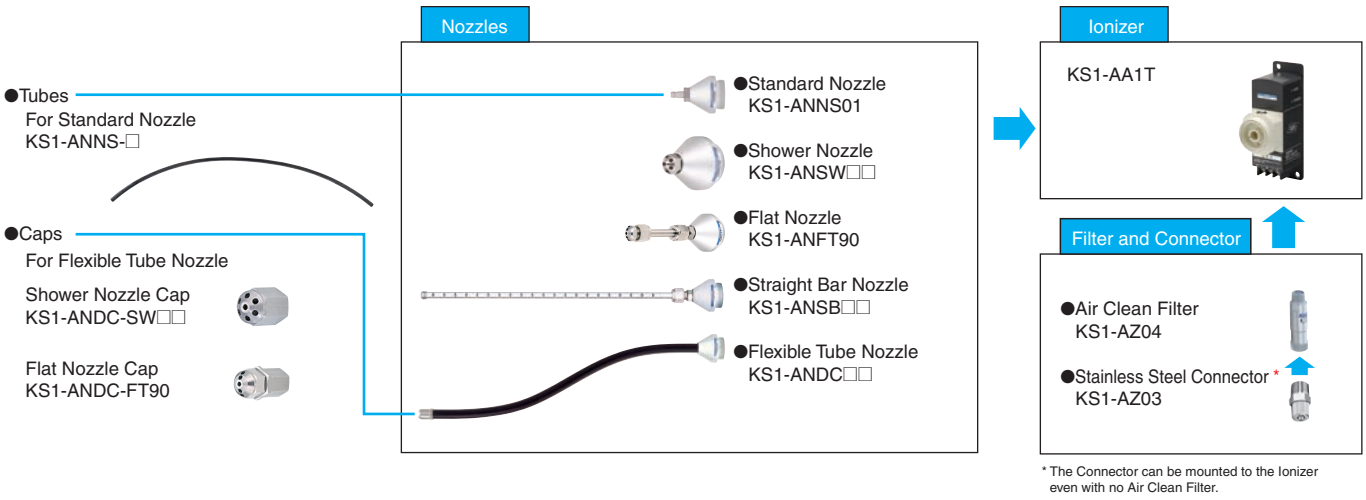
Wide Range of Nozzles for Optimal Ionization

- A wide range of nozzle variations
- High-frequency AC method with excellent ion balance

⚠ **Refer to *Safety Precautions* on page 6.**

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Product Configuration



* The Connector can be mounted to the Ionizer even with no Air Clean Filter.

Ordering Information

Ionizer

Model
KS1-AA1T

Accessories

Nozzles

Product		Model
Standard Nozzle		KS1-ANNS01
Shower Nozzle	60°	KS1-ANSW60
	90°	KS1-ANSW90
90° Flat Nozzle		KS1-ANFT90
Straight Bar Nozzle	100 mm	KS1-ANSB10
	200 mm	KS1-ANSB20
	300 mm	KS1-ANSB30
	400 mm	KS1-ANSB40
	500 mm	KS1-ANSB50
Flexible Tube Nozzle	100 mm	KS1-ANDC10
	200 mm	KS1-ANDC20
	300 mm	KS1-ANDC30
	400 mm	KS1-ANDC40
	500 mm	KS1-ANDC50

Tubes

Product	Model
500-mm Conductive Urethane Tube	KS1-ANNS-U
500-mm Fluororesin Tube	KS1-ANNS-F
500-mm Silicone Tube	KS1-ANNS-S

Caps

Product	Model
60° Flexible Shower Nozzle Cap	KS1-ANDC-SW60
90° Flexible Shower Nozzle Cap	KS1-ANDC-SW90
90° Flexible Flat Nozzle Cap	KS1-ANDC-FT90

Optional Products

Product	Model
Replacement Dischargers (set of 5)	KS1-AZ01T
Tool for Replacing Dischargers	KS1-AZ02
Stainless Steel Connector	KS1-AZ03
Air Clean Filter	KS1-AZ04

Ratings and Specifications

Ionizer

Item / Model	KS1-AA1T	
Power supply voltage	24 VDC ±5%	
Current consumption	Approx. 100 mA	
Discharge method	High-frequency AC (Approx. 68 kHz)	
Output voltage	±2 kV	
Safety circuit	Outputs alarms for ionization errors	
Discharge time	0.8 s max. (at a distance of 50 mm from air outlet)	
Ion balance	±15 V or less (at a distance of 50 mm from air outlet)	
Fluid used	Air (refer to ***Air Used*** on page 6)	
Amount of generated ozone	0.04 ppm or less (when standard nozzle used, at a distance of 300 mm from air outlet and primary side voltage of 0.25 MPa)	
Supplied air flow	Approx. 100 L/min (ANR) (when standard nozzle used, at primary side voltage of 0.15 Mpa)	
Indicators	Green POWER indicator lit while Ionizer ON, red ALM indicator lit for ionizing errors.	
Air pressure range	When Standard Nozzle or Flexible Tube Nozzle is used.	0.02 to 0.25 MPa
	When Standard Nozzle Tube is attached.	0.02 to 0.12 MPa
	When Shower Nozzle, Flat Nozzle, or Straight Bar Nozzle is used.	0.05 to 0.40 MPa
Operating ambient temperature	0 to 40°C (with no icing or condensation)	
Operating ambient humidity	35% to 65% (with no condensation)	
Weight	235 g (Ionizer only)	
Accessories	One ground lead (2 m)	

Air Clean Filter KS1-AZ04

■ Can be attached directly to the ionizer.

■ Diameter of collected particles with high filtration accuracy: 0.1 µm, collection efficiency: 99.9%.

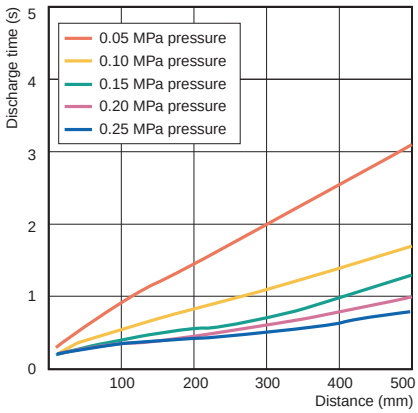
Specifications

Item / Model	KS1-AZ04
Fluid used	Air
Connection aperture	R(Rc)1/8
Collected particle size	0.1 µm
Collection efficiency	99.9%
Volume of air processed	40 l/min (ANR) (See note.) *
Film area	29.9 cm^2
Max. voltage used	0.97 MPa
Withstanding pressure	1.47 MPa
Operating temperature range	5 to 45°C
Weight	11 g
Recommended tightening torque	400 to 600 N·cm
Unit material	Aluminum alloy (alumite treated)
Element material	Porous, hollow thread membrane

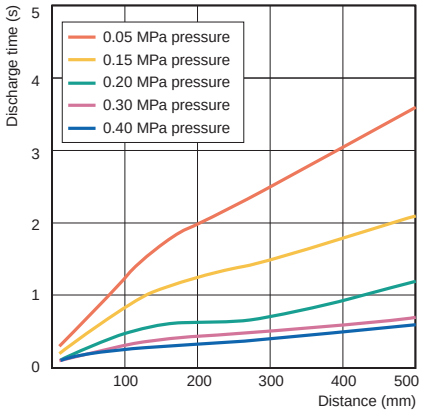
* At 0.7 MPa (pressure drop of 0.03 MPa)

Engineering Data (Reference Value)

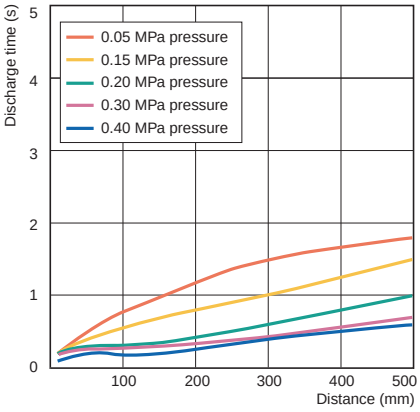
Standard Nozzle
KS1-ANNS01



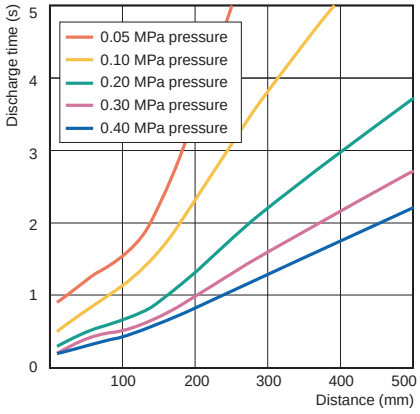
60° Shower Nozzle
KS1-ANSW60



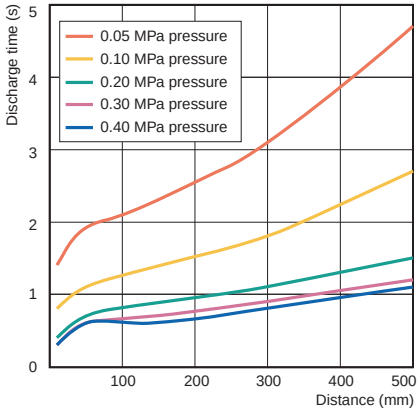
90° Shower Nozzle
KS1-ANSW90



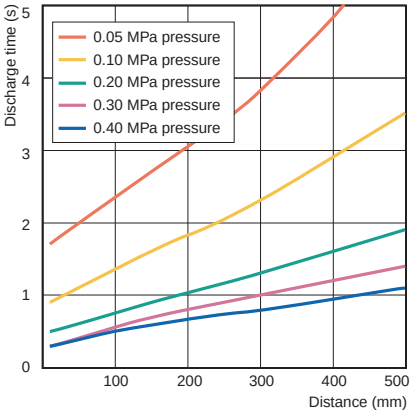
Flat Nozzle
KS1-ANFT90



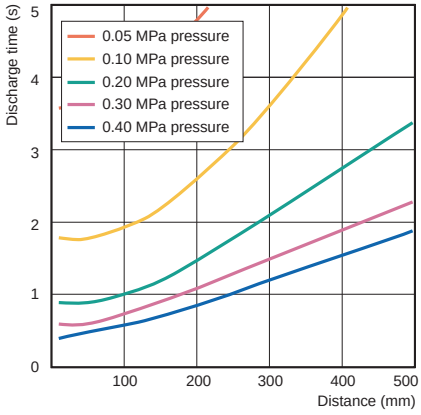
100-mm Straight Bar Nozzle
KS1-ANSB10



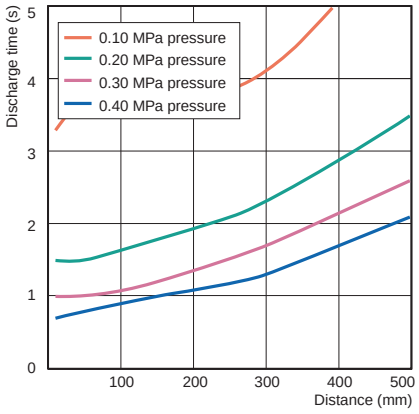
200-mm Straight Bar Nozzle
KS1-ANSB20



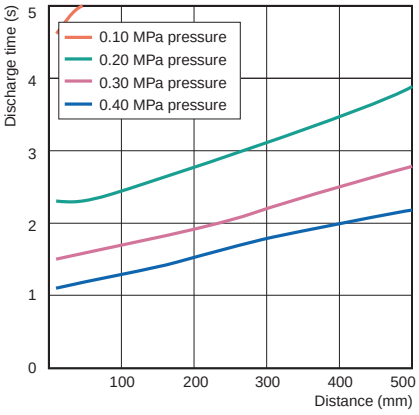
300-mm Straight Bar Nozzle
KS1-ANSB30



400-mm Straight Bar Nozzle
KS1-ANSB40

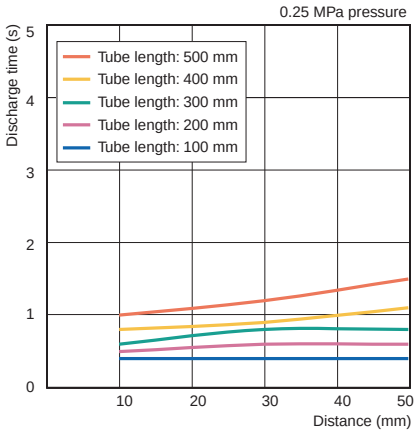


500-mm Straight Bar Nozzle
KS1-ANSB50

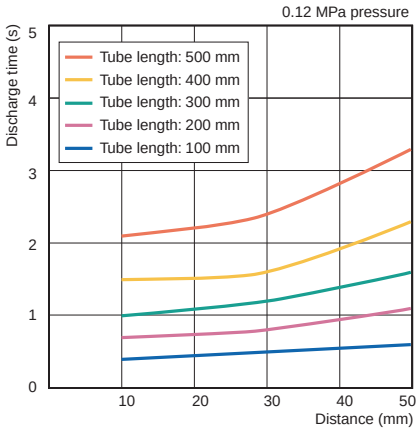


Measurement conditions
Dischange time: Time required to lower charge from ±1,000 V to ±100 V
Plate monitor: 150 × 150 mm, 20 pF

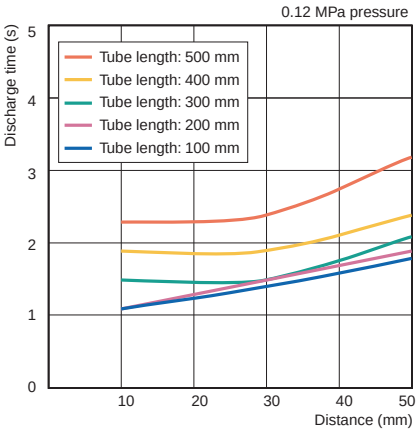
Flexible Tube Nozzle
KS1-ANDC□



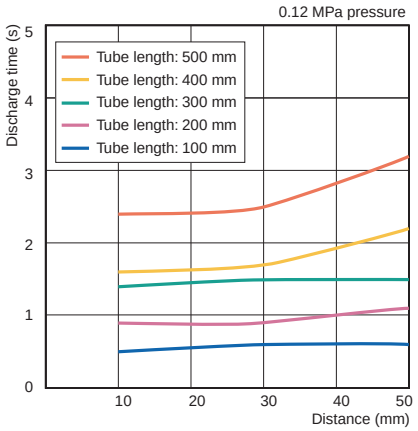
Standard Nozzle with Conductive Urethane Tube
KS1-ANNS-U□ Connected to KS1-ANNS01



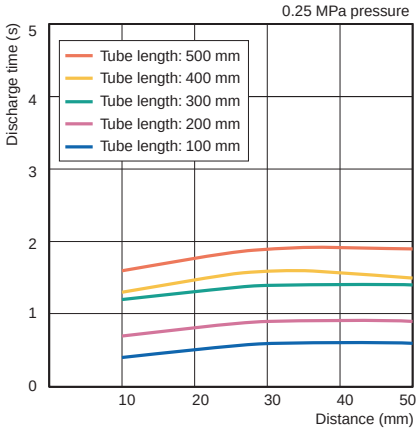
Standard Nozzle with Fluororesin Tube
KS1-ANNS-F□ Connected to KS1-ANNS01



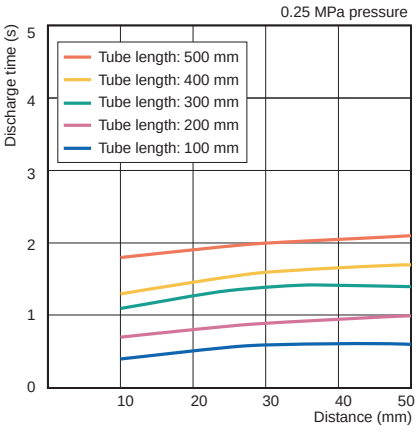
Standard Nozzle with Silicon Tube
KS1-ANNS-S□ Connected to KS1-ANNS01



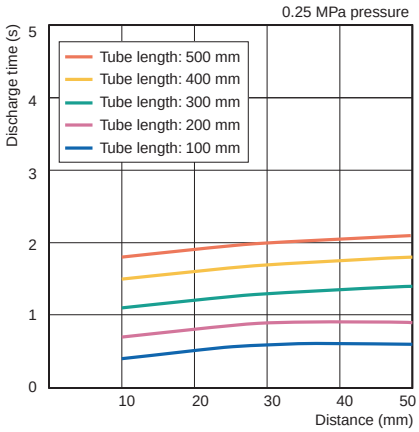
Flexible Tube and 60° Shower Nozzle Cap
KS1-ANDC-SW60 Connected to KS1-ANDC□



Flexible Tube and 90° Shower Nozzle Cap
KS1-ANDC-SW90 Connected to KS1-ANDC□



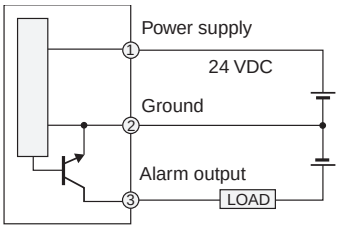
Flexible Tube and Flat Nozzle Cap
KS1-ANDC-FT90 Connected to KS1-ANDC□



Measurement conditions
Dischange time: Time required to lower charge from ±1,000 V to ±100 V
Plate monitor: 150 × 150 mm, 20 pF

Connections

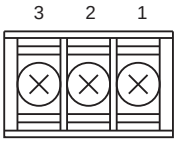
Wiring Diagram



50 mA max.
(24 VDC max.)

Note: Alarm outputs are NC.

Terminal Block Diagram



1: 24-VDC input power supply
2: Ground (power supply and output)
3: Output terminal

Safety Precautions

⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

Precaution for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Air Used

1. Make sure the pipes are adequately flushed with compressed air before connection. The pipes may become clogged or malfunctions may occur if the air in the pipes is contaminated by chips, sealing tape, rust, or other impurities.
2. Use air that does not contain oil or water. We recommend using clean dry air with a dew point of -10°C or lower and a maximum collected particle size of 0.01 μm.
3. Application is not possible if the air or the surrounding atmosphere contains organic solvents, phosphate hydraulic oil, sulfur dioxide, chlorine gas, acid or similar substance.

For technical information and product FAQs, refer to the *Technical Guide* on your OMRON website.

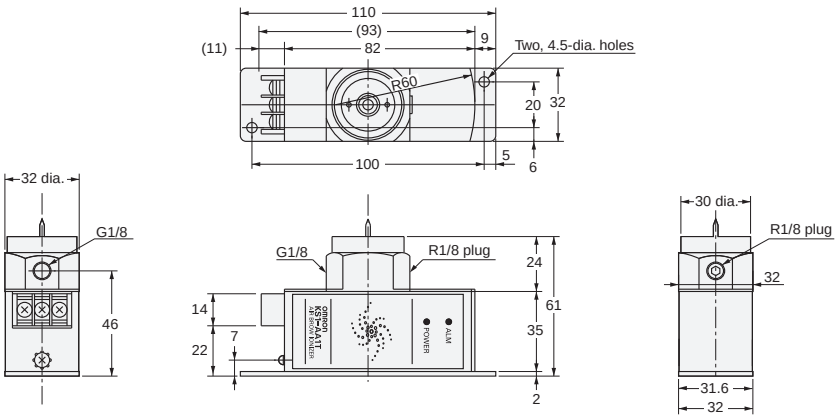
Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

Ionizer

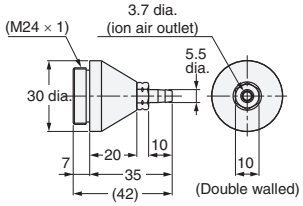
KS1



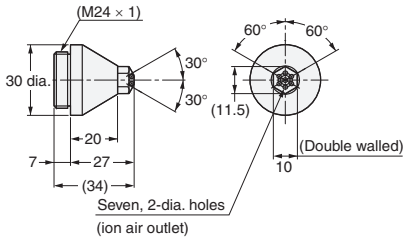
Nozzles and Optional Products Used with the Ionizer

Nozzles

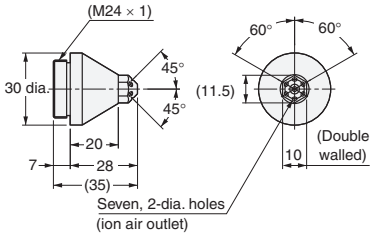
Standard Nozzle
KS1-ANNS01



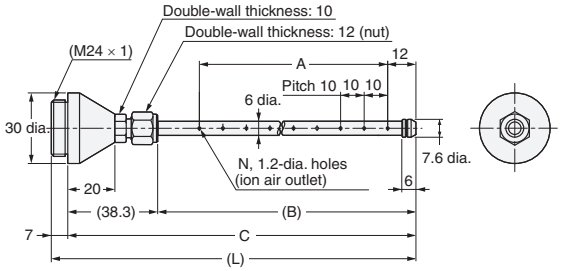
60° Shower Nozzle
KS1-ANSW60



90° Shower Nozzle
KS1-ANSW90

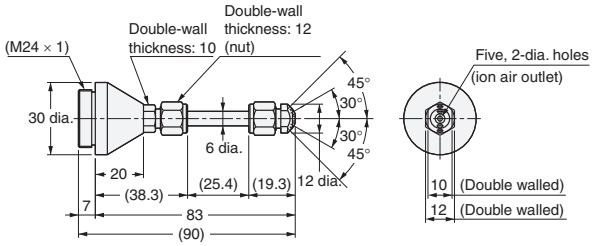


Straight Bar Nozzles
KS1-ANSB□

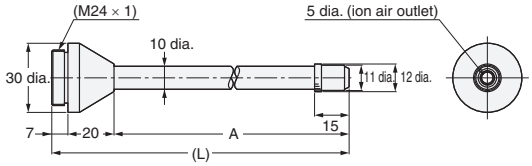


Model	A	B	C	L	N
KS1-ANSB10	100	129.7	168	175	11
KS1-ANSB20	200	229.7	268	275	21
KS1-ANSB30	300	329.7	368	375	31
KS1-ANSB40	400	429.7	468	475	41
KS1-ANSB50	500	529.7	568	575	51

Flat Nozzle
KS1-ANFT90



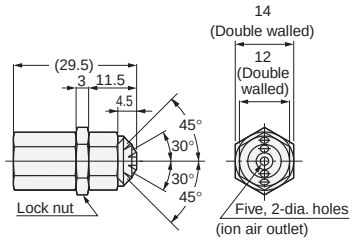
Flexible Tube Nozzles
KS1-ANDC□



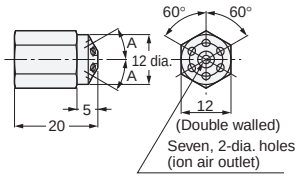
Model	A	L
KS1-ANDC10	102	129
KS1-ANDC20	202	229
KS1-ANDC30	302	329
KS1-ANDC40	402	429
KS1-ANDC50	502	529

Caps

Flexible Flat Nozzle Cap
KS1-ANDC-FT90



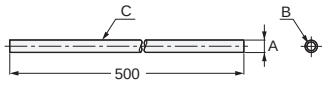
Flexible Shower Nozzle Caps
KS1-ANDC-SW□



Model	Type	A
KS1-ANDC-SW60	60°	30°
KS1-ANDC-SW90	90°	45°

Optional Tubes

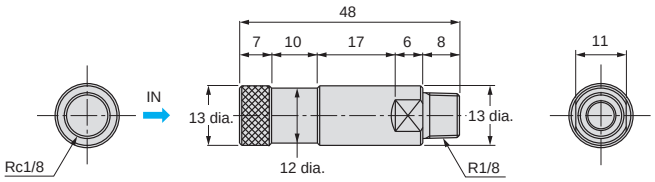
Optional Tubes for Standard Nozzles
KS1-ANNS-□



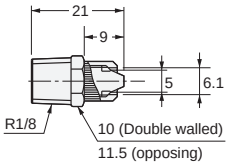
Model	A	B	C
KS1-ANNS-U	6 dia.	4 dia.	Conductive Urethane Tube
KS1-ANNS-F	7 dia.	5 dia.	Fluororesin Tube
KS1-ANNS-S	7 dia.	4 dia.	Silicon Tube

Optional Products

Optional Air Clean Filter
KS1-AZ04



Stainless Steel Connector
KS1-AZ03



- Attached to the Ionizer for air tube connection.
- If using products from other manufacturers, consider using stainless steel products for less impact on the ozone layer.

Terms and Conditions Agreement

Read and understand this catalog.
Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.
(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.
(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE
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Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.
NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products.
Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.
Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.
Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.
Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

2017.6

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

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