

SP. No.

Yamatake Corporation

製品仕様書 SPECIFICATIONS

CATALOG LISTING 1 L X 5 0 [1] [] - [2] [3]

[1] TYPE OF LEVER

Code	Type of lever
01	Standard roller lever
02	No lever
03	Adjustable roller lever

[2] CONDUIT


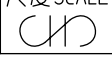
Code	Conduit
~	Pressure resistance thread joint steel conduit type
R	Pressure resistance packing type

[3] CONTACT MATERIAL

Code	Contact material
~	Silver
K	Gold plated

Catalog listings covered by this drawing are as in the below table. △

Catalog listing	Electrical rating
1 L X 5 0 0 1 1 L X 5 0 0 2 1 L X 5 0 0 3 1 L X 5 0 0 1 - R 1 L X 5 0 0 2 - R 1 L X 5 0 0 3 - R	Y164 5A-250 VAC 0.8A-125VDC : 0.4A-250VDC
1 L X 5 0 0 1 - K 1 L X 5 0 0 2 - K 1 L X 5 0 0 3 - K 1 L X 5 0 0 1 - RK 1 L X 5 0 0 2 - RK 1 L X 5 0 0 3 - RK	Y93 0.1A-125 VAC 0.1A- 30 VDC

08	ECOP09-1571	8,18,'09	HSASAKI	TOMITA	作成DR. SHIMIZU 1.30.'97  尺度 SCALE 記入のない公差 TOL. UNLESS NOTED 			
07	ECOP08-0269	7,24,'08	SERIZAWA	TOMITA				
06	EC005-1071	12,19,'05	SAKIYAMA	ARAI				
05	JE003-1254	3,19,'03	TATSUHARA	ARAI				
04	JE001-1306	5,11,'01	TATSUHARA	ARAI				
4 08	03	JE099-1319	7,30,'99	TATSUHARA	ARAI	検図CHK. ARAI 1.31.'97 形番 MODEL 1LX50**-**		
3 08	02	JE098-1459	12,16,'98	TATSUHARA	ARAI	認可APPD S.SANDO 1.31.'97 名称 NAME EXPLOSION PROOF SWITCH		
2 08	01	JE098-1259	3,20,'98	TATSUHARA	ARAI	日付DATE 1.31.'97 図番 NO. AD52753E		
頁 PAGE	改番 REV.	改番 REV.	来歴 RECORD	: 日付 DATE	担当 BY	検閲 APPD.	改番 REV. 08	1/4

SP. No.

Yamatake Corporation

製品仕様書 SPECIFICATIONS

1. STANDARDS

- ・Conforms to; NECA C 4508 \triangle
- \triangle Approved by; Explosion-protected electrical apparatus
Explosion-proof structure; d2G4
- \triangle Approved No. T59979 (The Technology Institution of Industrial Safety)
- \triangle NIPPON KAIJI KYOKAI 05T601

2. STRUCTURE

- ・Type of contact; Two-circuit double-break \triangle
- ・Protective structure; IP67 (IEC 60529)
(JIS C 0920) \triangle
- ・Shape of contact; Rivet
- ・Shape of terminal; Screw (M4 binding head screw with spring lock washer)

3. ELECTRICAL CHARACTERISTICS

- ・Insulation resistance and dielectric strength;

Property Parts measured	Insulation resistance (with 500Vdc megger)	Dielectric strength (50/60Hz, for 1 minute)
Between terminals of same polarities \triangle	100 M Ω min. \triangle	1000 Vac
Between each terminal and non-live metal part	100 M Ω min. \triangle	2000 Vac
Between each terminal and earth	100 M Ω min. \triangle	2000 Vac

- ・Contact resistance

Silver contacts;
50 m Ω max. (initial) Measured by the voltage drop method at 6 to 8 Vdc 1A.

Gold plated contacts;
100 m Ω max. (initial) Measured by the voltage drop method at 6 to 8 Vdc 0.1A.

- ・Minimum contact operating current

Silver contacts; \triangle 10mA-24V, 20mA-12V

Gold plated contacts; \triangle 10mA- 5V

08	~	8,18,'09	HSASAKI	TOMITA	作成DR. SHIMIZU 1,30,'97		尺度 SCALE	記入のない公差 TOL. UNLESS NOTED	
07	~	7,24,'08	SERIZAWA	TOMITA	検図CHK. ARAI 1,31,'97		形番 MODEL	1LX50**-**	
06	~	12,19,'05	SAKIYAMA	ARAI	認可APPD S.ANDO 1,31,'97		名称 NAME	EXPLOSION PROOF SWITCH	
05	No.27836 etc.	3,19,'03	TATSUHARA	ARAI	日付 DATE 1,31,'97		番 NO.	AD52753E	
04	IEC529	5,11,'01	TATSUHARA	ARAI	改番 REV.		改番 REV.	08	
02	~	12,16,'98	TATSUHARA	ARAI	来歴 RECORD		日付 DATE	2/4	
頁 PAGE	改番 REV.	改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.	日付 DATE	1,31,'97	改番 REV.

4. MECHANICAL CHARACTERISTICS (Value at 38.1mm long lever)[△]

- Actuator strength; Withstands **5** times O.F. in the operating direction for 1 minute.
- Terminal strength; Withstands **1.5N·m** tightening torque applied for 1 minute[△]
- Shock; ^{△△} At **200 m/s²**, contact misoperation is 1ms max. in the free position and in the total travel position.
- Vibration; With a vibration peak-to-peak amplitude of 1.5mm and frequency of 10 to 55Hz for 2 continuous hours, contact misoperation is 1ms max. in the free position and in the total travel position.
- Allowable operating speed; **1.0 mm/s to 0.5 m/s**
 At the lowest speed, contact instability lasts 0.1s max.
 At the highest speed, the actuator is not damaged.
- Mechanical operating frequency; **120 cycles/minute** max.

5. LIFE

- Mechanical life: [△] **4000 k cycles** min. at 70 to 100% of the rated O.T.
- Electrical life: The conditions at the rated load, operation frequency of 20 cycles a minute are satisfied. [△]


Contact material	Operation cycle
Silver	500k cycles min.
Gold plated	2000k cycles min.

6. ENVIRONMENTAL CHARACTERISTICS

- Operating temperature; **-10 to +60 °C** (at no freezing) ^{△△}
- Environmental requirement level ; Listed by the Ministry of Labor for use in hazardous atmospheres of d2G4. (watertight)

7. RECOMMENDED TIGHTENING TORQUE

- For mounting the switch on a panel: **5 to 6 N·m** (M5 hex. socket head cap screw) ^{△△}
- For mounting the cover on the housing: **5 to 6 N·m** (M5 hex. socket head cap screw) ^{△△}
- For mounting the head on the housing: **1.3 to 1.7 N·m** (M4 pan head screw with spring lock washer) ^{△△}
- For mounting the terminal on the switch: **1.3 to 1.7 N·m** (M4 binding head screw with spring lock washer) ^{△△}
- For mounting the lever on the switch: **4 to 5.2 N·m** (M5 hex. socket head cap screw) ^{△△}

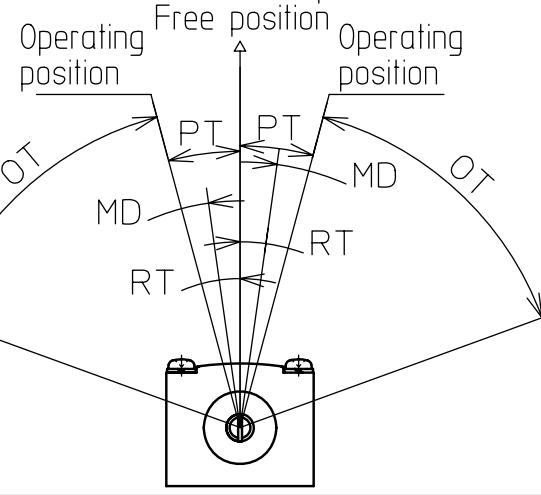
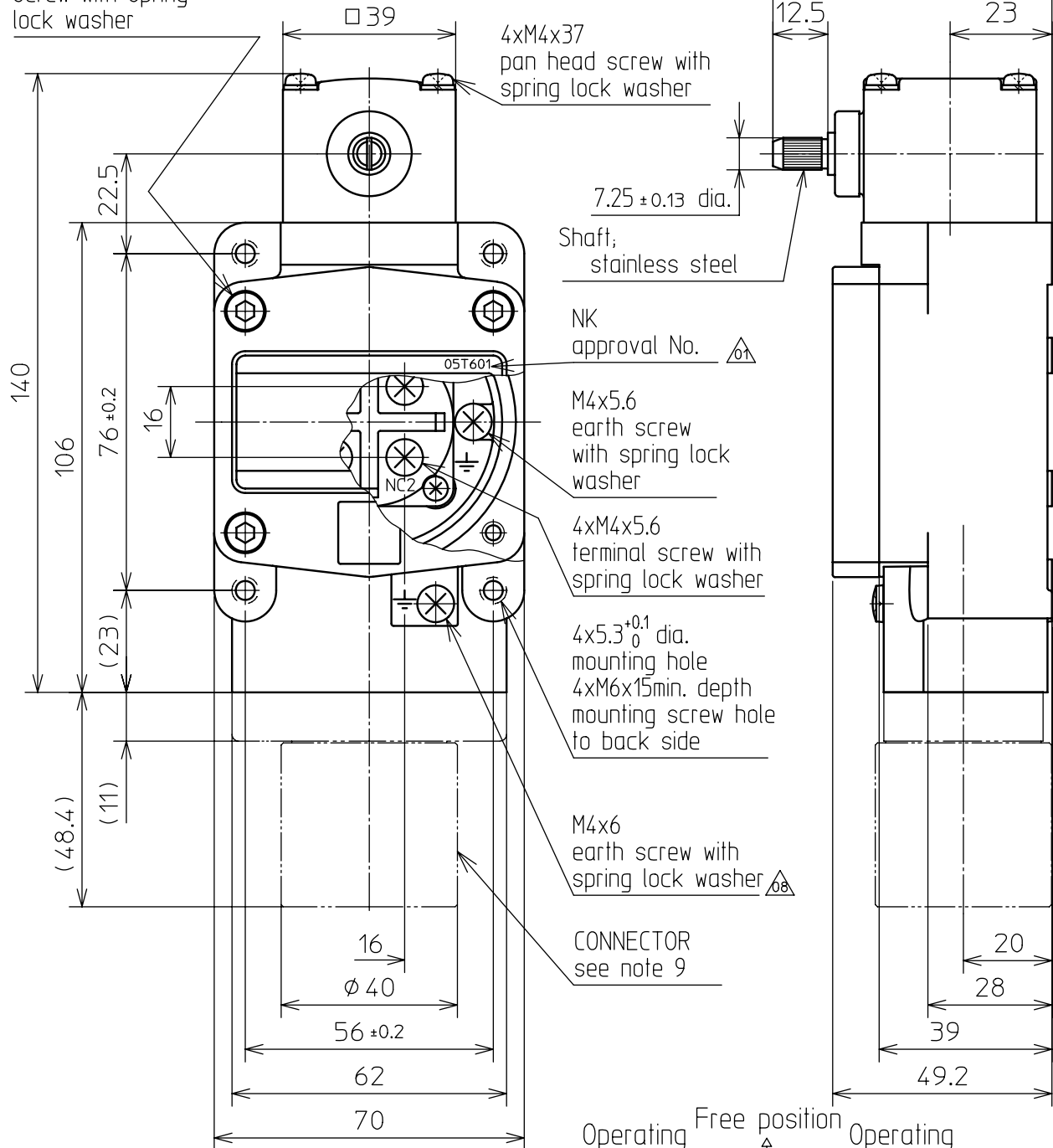
08	~	8,18,'09	HSASAKI	TOMITA	作成DR. SHIMIZU 1,30,'97		尺度 SCALE	記入のない公差 TOL. UNLESS NOTED
07	~	7,24,'08	SERIZAWA	TOMITA	検図CHK. ARAI 1,31,'97	形番 MODEL	1LX50**-**	~
05	+70°C	3,19,'03	TATSUHARA	ARAI	認可APPD S.ANDO 1,31,'97	名称 NAME	EXPLOSION PROOF SWITCH	
04	~	5,11,'01	TATSUHARA	ARAI	日付 DATE	図番 NO.	AD52753E	改番REV. 3/4
03	SI (MKS) → SI	7,30,'99	TATSUHARA	ARAI	担当 BY	検閲 APPD.		
02	30 long lever	12,16,'98	TATSUHARA	ARAI	来歴 RECORD	日付 DATE		
頁 PAGE	改番 REV.	改番 REV.						

S.P. No.

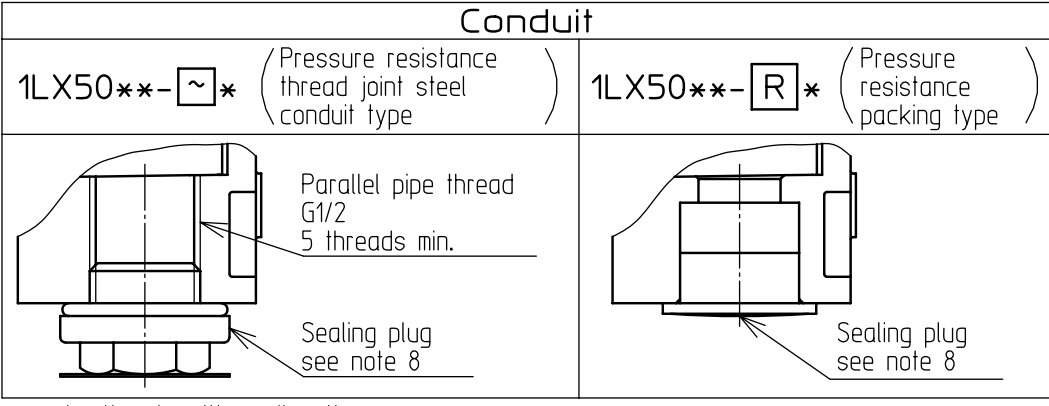
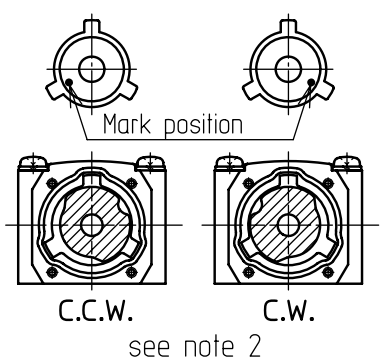
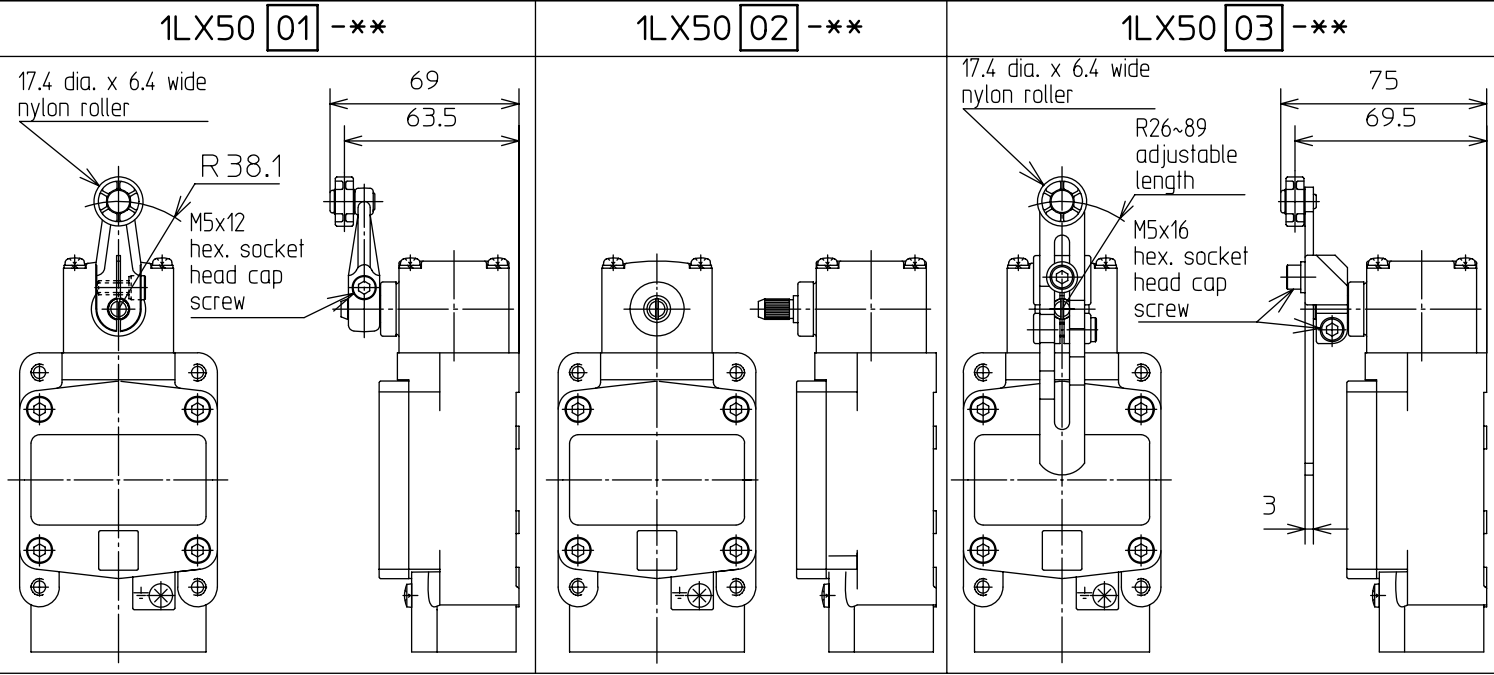
Yamatake Corporation

製品仕様書
SPECIFICATIONS

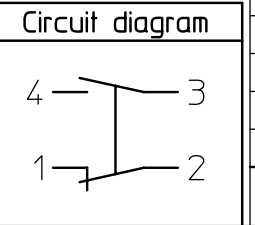
4xM5x12
hex. socket head cap
screw with spring
lock washer



Characteristics	
OF (Operating force)	12.8N max. \triangle
RF (Release force)	1.1N min. \triangle
PT (Pretravel)	15° max.
MD (Movement differential)	7° max.
OT (Overtravel)	55° min.
RT (Release travel)	(5°)



- Notes
- This switch is assembled for actuation in either direction.
 - To convert switch for actuation in either clockwise direction only or counterclockwise direction only, remove screws, cover and spring on head housing and rotate shaft. Then, as marked cam comes off, remove it. Rotate shaft and reassemble cam as shown with hatching in following drawing.
 - For wiring to this switch, disassemble four M5x12 hex. socket head screws with hex. Wrench to remove cover, and wire terminals. Use this switch in conformity with "recommended practice for explosion protected electrical installations in general industries" issued by ministry of labor since unbalanced or insufficient tightening of cover and insufficient conduit connection may result in remarkable explosion proof performance deterioration.
 - Housing, cover, and head are made of aluminum alloy finished with gray epoxy-resin baking paint.
 - External screws are made of stainless steel.
 - When connecting wire to terminal screw, assemble amp round terminal 328527 or equivalents to wire end.
 - Do not load more than torque on shaft.
 - Do not remove sealing plug till starting wiring.
 - As explosion-proof connector is not attached to switch, select and order separately 2PA-JEX1** series (conduit size G1/2) or 2PA-JEX2** series. (conduit size G3/4).
 - In the mechanical characteristics of and rf are the characteristics at 38.1mm lever length.



08	~	8,18,'09	HSASAKI	TOMITA
07	~	7,24,'08	SERIZAWA	TOMITA
04	~	5,11,'01	TATSUHARA	ARAI
03	SI (MKS) → SI	7,30,'99	TATSUHARA	ARAI
02	~	12,16,'98	TATSUHARA	ARAI
01	NK 80T605	3,20,'98	TATSUHARA	ARAI
改番 REV.	来歴 RECORD	: 日付 DATE	担当 BY	検閲 APPD.

作成DR. SHIMIZU 1.30.'97	尺度 SCALE	記入のない公差 TOL. UNLESS NOTED
検図CHK. ARAI 1.31.'97	形番 MODEL	1LX50** - **
認可APPD S.ANDO 1.31.'97	名称 NAME	EXPLOSION PROOF SWITCH
日付 DATE 1.31.'97	図番 NO.	AD52753E
	改番REV.	4/4
		08

SP.NO.

Yamatake Corporation

製品仕様書
SPECIFICATIONS**Terms and Conditions**

We would like to express our appreciation for your purchase and use of Yamatake products.

You are required to acknowledge and agree upon the following terms and conditions for your purchase of Yamatake 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**

Yamatake 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.

1.2 Warranty scope

In the event that Yamatake product has any failure attributable to Yamatake during the aforementioned warranty period, Yamatake 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 Yamatake product
(noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
- (2) Failure caused for other reasons than Yamatake product;
- (3) Failure caused by any modification or repair made by any person other than Yamatake or Yamatake's subcontractors;
- (4) Failure caused by your use of Yamatake 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 Yamatake's shipment did not allow Yamatake to predict; or
- (6) Failure that arose from any reason not attributable to Yamatake, 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 Yamatake shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Yamatake products.

2 Ascertainment of suitability

You are required to ascertain the suitability of Yamatake 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 Yamatake 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 Yamatake is constantly making efforts to improve the quality and reliability of Yamatake products, there exists a possibility that parts and machinery may break down.

You are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, safety design, or the like so that the said Equipment may satisfy the level of the reliability and safety required in your use, whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth.

3 Precautions and restrictions on application

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

Any Yamatake products shall not be used for/with medical equipment.

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 Yamatake 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 and other designs of protection/safety circuit on your own responsibility to ensure the 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 Yamatake 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

頁 改番

改番
REV.来歴
RECORD日付
DATE担当
BY検閲
APPD.

SP.NO.		Yamatake Corporation		製品仕様書 SPECIFICATIONS	
		<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>4 Precautions against long-term use</p> <p>Use of Yamatake 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 Yamatake products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.</p>			
		<p>5 Recommendation for renewal</p> <p>Mechanical components, such as relays and switches, used for Yamatake 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 Yamatake products every 5 to 10 years unless otherwise specified in specifications or instruction manuals.</p> <p>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.</p> <p>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>6 Other precautions</p> <p>Prior to your use of Yamatake 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 Yamatake products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.</p>			
		<p>7 Changes to specifications</p> <p>Please note that the descriptions contained in any documents provided by Yamatake 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>8 Discontinuance of the supply of products/parts</p> <p>Please note that the production of any Yamatake 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.</p> <p>For field instruments, we may not be able to undertake parts replacement for similar reasons.</p>			
		<p>9 Scope of services</p> <p>Prices of Yamatake 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> <p>(1) Installation, adjustment, guidance, and attendance at a test run</p> <p>(2) Maintenance, inspection, adjustment, and repair</p> <p>(3) Technical guidance and technical education</p> <p>(4) Special test or special inspection of a product under the conditions specified by you</p> <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	来歴	日付	担当
	REV.		RECORD	DATE	BY
					検閲
					APPD.