

SP. No.

CATALOG LISTING VCX-5 [1] [2] [3] [4] [5]

1 OPERATION TYPE, CIRCUIT DIAGRAM

CODE	OPERATION TYPE	CIRCUIT DIAGRAM		
		C. C. W.	FREE POSITION	C. W.
0	CENTER NEUTRAL			
1	SIMULTANEOUS OPERATION TYPE			

2 TYPE OF LEVER

CODE	TYPE OF LEVER
01	STANDARD LEVER
02	NO LEVER
03	ADJ. LEVER

3 CONDUIT

CODE	CONDUIT
~	PRESSURE RESISTANCE THREAD JOINT STEEL CONDUIT TYPE
R	PRESSURE RESISTANCE PACKING TYPE

4 CONTACT MATERIAL AND ELECTRICAL RATING

CODE	CONTACT MATERIAL	ELECTRICAL RATING
~	SILVER	Y78 5A-250 VAC 0.4A-125VDC : 0.2A-250VDC
K	GOLD ALLOY	Y93 0.1A-125 VAC 0.1A- 30 VDC

5 ENVIRONMENT

CODE	SEAL MATERIAL	ROLLER			REMARKS
		MATERIAL	DIA.	WIDE	
~	NITRILE RUBBER	NYLON	17.4	6.4	~
H	SILICONE RUBBER	BRASS	17.4	7.1	FOR TROPICS
L	SILICONE RUBBER	NYLON	17.4	6.4	FOR COLD DISTRICT

APPROVAL NUMBER NO.TIIS

VCX-5***-***

CAT.LIST I	CAT.LIST II	VCX-5***-***	VCX-5***-***
VCX-5 [0] ***-***	VCX-5***-*** [~]	T62608	T62611
VCX-5 [1] ***-***	VCX-5***-*** [H] VCX-5***-*** [L]	T62609	T62612

11	ECO07-2150	7,24,'07	SERIZAWA	TOMITA
10	ECO06-0467	5,18,'06	KANAI	TOMITA
09	ECO06-0013	2,10,'06	KANAI	TOMITA
08	ECO05-1071	1, 6,'06	SAKIYAMA	ARAI
07	JE003-1270	3,31,'03	TATSUHARA	ARAI
06	JE099-1323	7,30,'99	TATSUHARA	ARAI
05	JE098-1247	3, 4,'98	TATSUHARA	ARAI
04	JE096-1322	11,29,'96	TATSUHARA	ARAI
改番 REV.	来歴 RECORD	: 日付 DATE	担当 BY	検閲 APPD.

作成DR. TATSUHARA 11, 29, '96		尺度 SCALE	記入のない公差 TOL. UNLESS NOTED
検図CHK. ARAI 11, 29, '96	形番 MODEL	VCX-5***-***	
認可APPD ANDO 11, 29, '96	名称 NAME	EXPLOSION PROOF SWITCH	
日付 DATE 11, 29, '96	図番 NO.	AD50273E	改番REV. 11 / 5

SP. No.

Yamatake Corporation

製品仕様書 SPECIFICATIONS

1. STANDARDS

- Conforms to: NECA C 4508 \triangle_{11}
- Approved by: Explosion-protected electrical apparatus
 \triangle_{07} Explosion-proof structure: d2G4
 Approved No. : \triangle_{09}
 The Technology Institution of Industrial Safety: See sheet 1/5 \triangle_{09}
 NIPPON KAIJI KYOKAI: 07T619 $\triangle_{04}\triangle_{05}\triangle_{11}$

2. STRUCTURE

- Type of contact: 2xSPDT
- Protective structure: IP67 (IEC 60529) \triangle_{07}
 (JIS C 0920) \triangle_{08}
- Shape of contact: Silver Contacts: Rivet
 Gold Alloy Contacts: Cross Point
- Shape of terminal: Screw (M3 binding head screw with toothed lock washer)


3. ELECTRICAL CHARACTERISTICS

• Insulation resistance and dielectric strength:

Property	Insulation resistance (with 500Vdc megger)	Dielectric strength (50/60Hz, for 1 minute) \triangle_{10}
Parts measured		
Between terminals of same polarities \triangle_{09}	100 M Ω min. \triangle_{07}	600 Vac
Between terminals of different polarities	100 M Ω min. \triangle_{07}	2000 Vac
Between each terminal and non-live metal part	100 M Ω min. \triangle_{07}	2000 Vac
Between each terminal and earth	100 M Ω min. \triangle_{07}	2000 Vac

- Contact resistance
 - Silver Contacts: 50 m Ω max. (initial) Measured by the voltage drop method at 6 to 8 Vdc 1A.
 - Gold Alloy 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: 10mA at 24V, 20mA at 12V
 - Gold Alloy Contacts: 10mA at 5V

11	~	7,24,'07	SERIZAWA	TOMITA
10	~	5,18,'06	KANAI	TOMITA
09	~	2,10,'06	KANAI	TOMITA
08	~	1,23,'06	SAKIYAMA	ARAI
07	UNIFIED	3,31,'03	TATSUHARA	ARAI
06	~	7,30,'99	TATSUHARA	ARAI
05	80T605	3, 4,'98	TATSUHARA	ARAI
04	~	11,29,'96	TATSUHARA	ARAI

作成DR. TATSUHARA 11, 29, '96		尺度 SCALE C/D	記入のない公差 TOL. UNLESS NOTED ~
検図CHK. ARAI 11, 29, '96	形番 MODEL	VCX-5***-***	
認可APPD ANDO 11, 29, '96	名称 NAME	EXPLOSION PROOF SWITCH	
日付DATE 11, 29, '96	図番 NO.	AD50273E	改番REV. 2/5

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製品仕様書 SPECIFICATIONS

4. MECHANICAL CHARACTERISTICS (Value at 30mm long lever)

- Actuator strength: Withstands **5** times O.F. in the operating direction for 1 minute. \triangle
- Terminal strength: Withstands **0.6N·m** tightening torque applied for 1 minute. \triangle
- Shock: At **200 m/s²**, contact misoperation is 1ms max. in the free position and in the total travel position. \triangle
- Vibration: \triangle 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: **0.3 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: **2000 k cycles min.** at 70 to 100% of the rated O.T.
- Electrical life:


Contact material	Condition	Operation cycle
Silver	5A-250 Vac 0.4A-125Vdc : 0.2A-250Vdc	30k cycles min.
	3A-250 Vac 0.4A- 30Vdc 0.2A-125Vdc : 0.1A-250Vdc	100k cycles min.
Gold Alloy	0.1A-125 Vac 0.1A- 30 Vdc	2000k cycles min.

6. ENVIRONMENTAL CHARACTERISTICS

- Operating temperature: **-10 to +60 °C** (no freezing or condensation) \triangle
- 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** \triangle (M5 hex. socket head cap screw) \triangle
- For mounting the cover on the housing: **5 to 6 N·m** \triangle (M5 hex. socket head cap screw with spring lock washer) \triangle
- For mounting the head on the housing: **1.3 to 1.7 N·m** \triangle (M4 pan head screw with spring lock washer) \triangle
- For mounting the terminal on the switch: **0.4 to 0.6 N·m** \triangle (M3 binding head screw with toothed lock washer) \triangle
- For mounting the lever on the switch: **4 to 5.2 N·m** \triangle (M5 hex. socket head cap screw) \triangle

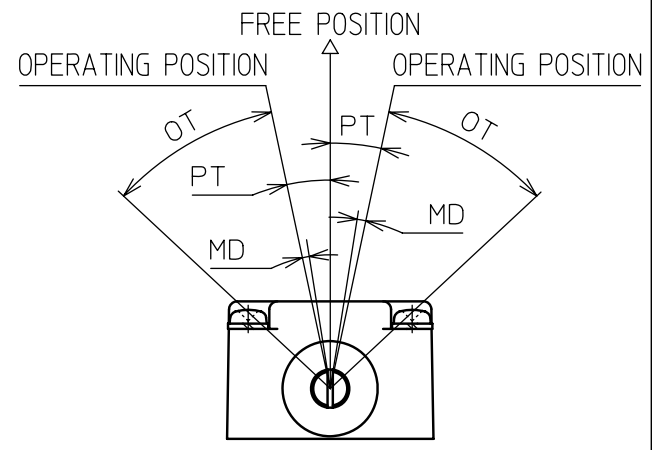
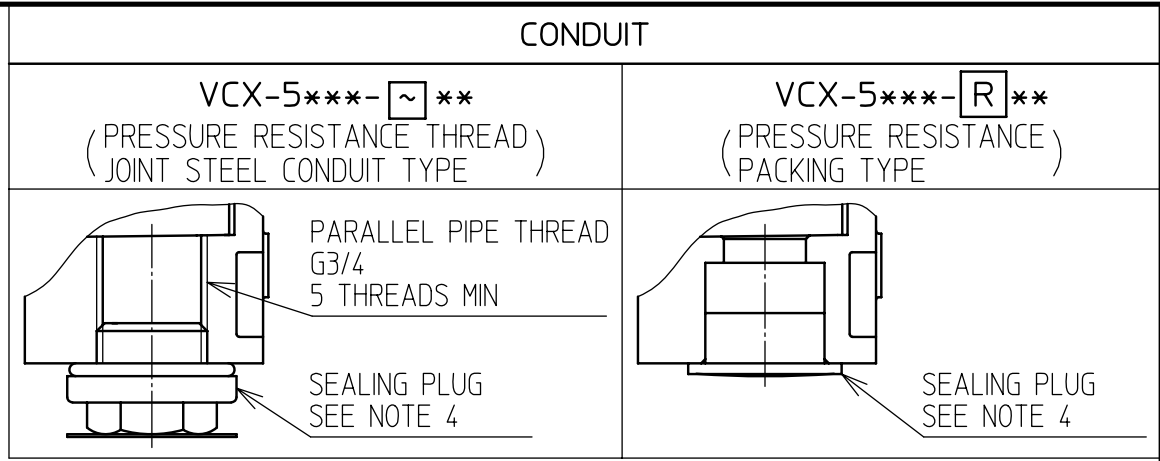
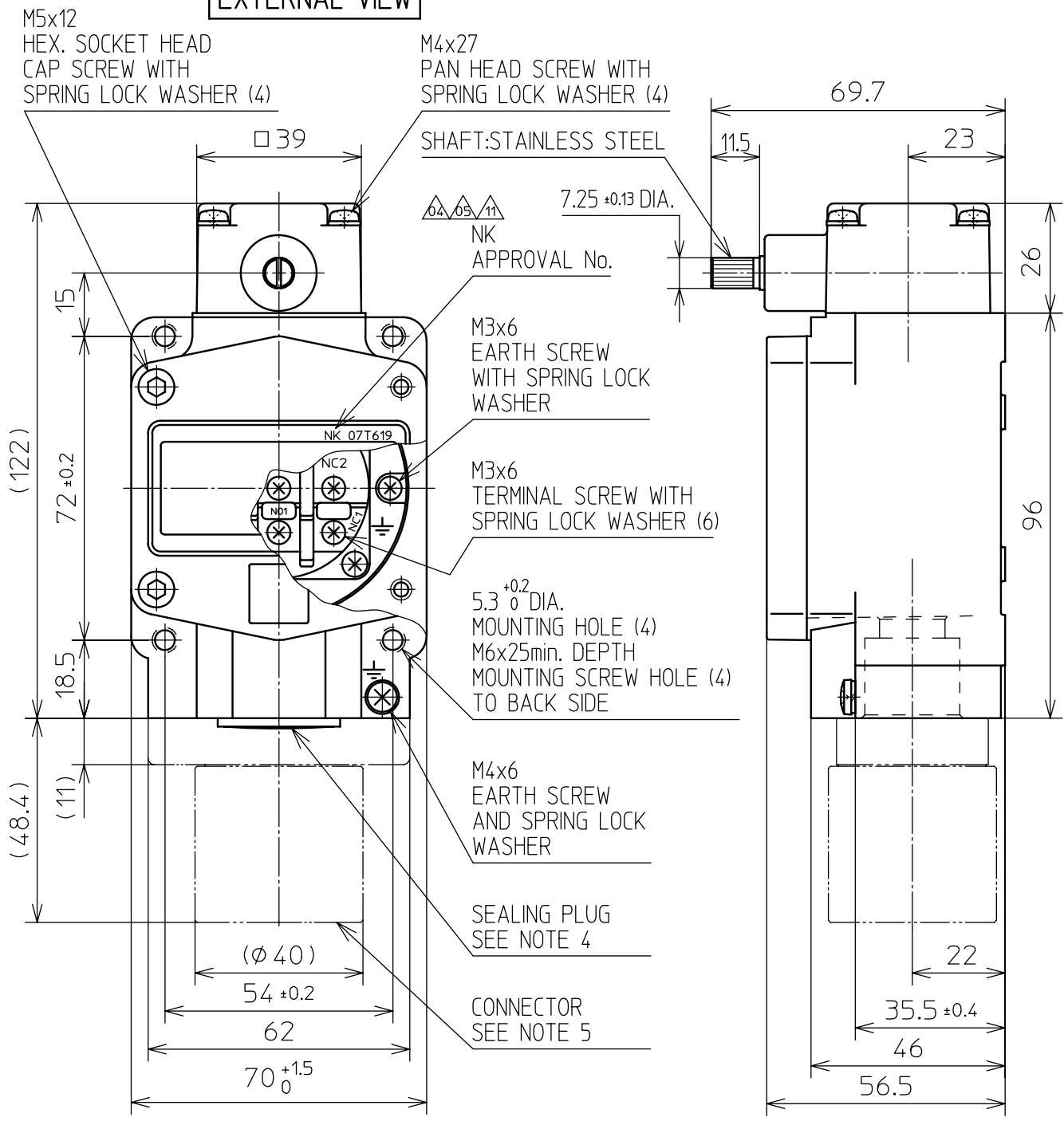
10	~	5,18,'06	KANAI	TOMITA	作成DR. TATSUHARA 11, 29, '96		尺度 SCALE CIP	記入のない公差 TOL. UNLESS NOTED ~
09	~	2,10,'06	KANAI	TOMITA				
08	PAGE 3/4 → 3/5	1,23,'06	SAKIYAMA	ARAI	検図CHK. ARAI 11, 29, '96	形 番 MODEL	VCX-5***-***	
07	+70°C etc.	3,31,'03	TATSUHARA	ARAI				
06	SI (MKS) → SI	7,30,'99	TATSUHARA	ARAI	認可 APPD ANDO 11, 29, '96	名 称 NAME	EXPLOSION PROOF SWITCH	
05	in conformity to JIS	3, 4,'98	TATSUHARA	ARAI				
04	~	11,29,'96	TATSUHARA	ARAI	日付 DATE 11, 29, '96	図 番 NO.	AD50273E	改番REV. 3/5
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製品仕様書
SPECIFICATIONS

EXTERNAL VIEW



- △ NOTES
- FOR WIRING TO THIS SWITCH, DISASSEMBLE FOUR M5x12 HEX. SOCKET HEAD SCREWS WITH SPRING LOCK WASHER, 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 PAINT.
 - EXTERNAL SCREWS ARE MADE OF STAINLESS STEEL.
 - DO NOT REMOVE SEALING PLUG TILL STARTING WIRING.
 - AS EXPLOSION-PROOF CONNECTOR IS NOT ATTACHED TO SWITCH, SELECT AND ORDER SEPARATELY.

CATALOG LISTING	CONDUIT SIZE G1/2	CONDUIT SIZE G3/4
VCX-5***-***~	2PA-JEX1** SERIES	2PA-JEX2** SERIES
VCX-5***-***H	2PA-JEX1**L SERIES	2PA-JEX2**L SERIES
VCX-5***-***L		

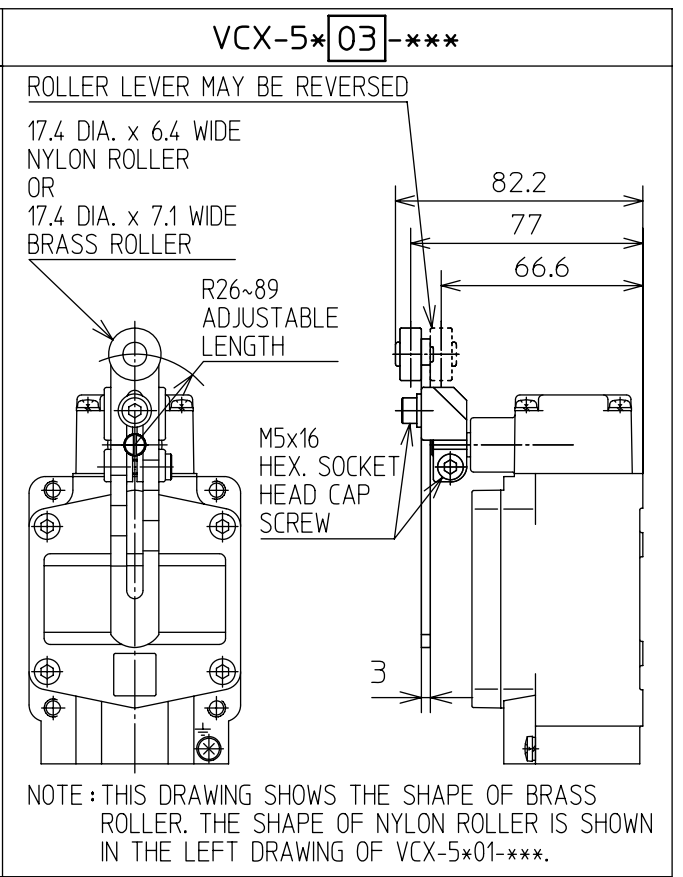
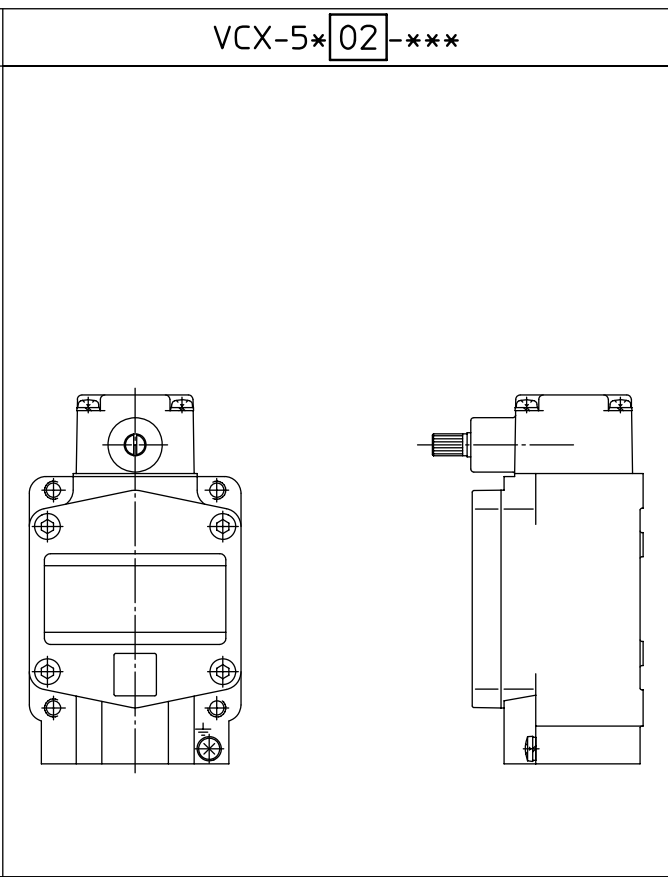
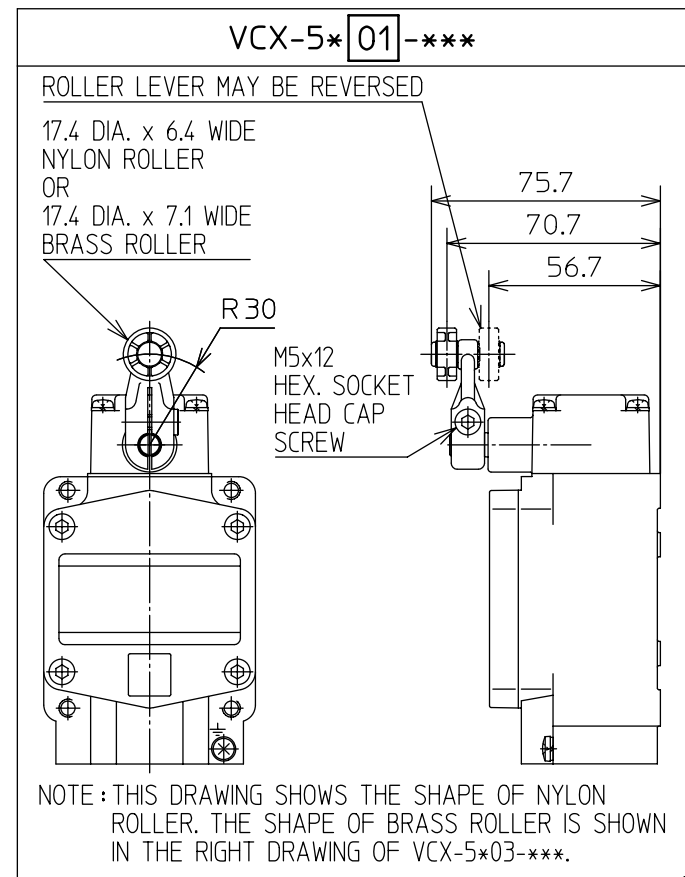
6. IN THE MECHANICAL CHARACTERISTICS OF AND RF ARE THE CHARACTERISTICS AT 30 LEVER LENGTH.

CHARACTERISTICS	CATALOG LISTING	VCX-500*-***△	VCX-510*-***△
OPERATING FORCE		15.7N max.	15.7N max. △
RELEASE FORCE		2.2N min.	2.2N min. △
PRETRAVEL		10' max.	12' max.
MOVEMENT DIFFERENTIAL		3' max.	3' max.
OVERTRAVEL		35' min.	35' min.
SIMULTANEITY OF TWO SWITCHES		~	3' max. △

11	~	7,24,'07	SERIZAWA	TOMITA
10	~	5,18,'06	KANAI	TOMITA
08	ADDITION	1, 6,'06	SAKIYAMA	ARAI
07	UNIFIED	3,31,'03	TATSUHARA	ARAI
06	SI (MKS) → SI	7,30,'99	TATSUHARA	ARAI
05	80T605	3, 4,'98	TATSUHARA	ARAI
04	TO ADD	11,29,'96	TATSUHARA	ARAI
改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.

作成 DR. TATSUHARA 11, 29, '96	検図 CHK. ARAI 11, 29, '96	認可 APPD. ANDO 11, 29, '96	日付 DATE 11, 29, '96	尺度 SCALE 記入のない公差 TOL. UNLESS NOTED ±0.8
形番 MODEL	VCX-5***-***			
名称 NAME	EXPLOSION PROOF SWITCH			
図番 NO.	AD50273E	改番 REV. 11	4	5

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08	~	1, 6,'06	SAKIYAMA	ARAI
07	UNIFIED	3,31,'03	TATSUHARA	ARAI
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尺度SCALE 記入のない公差 TOL. UNLESS NOTED ±0.8				VCX-5***-***		EXPLOSION PROOF SWITCH		AD50273E

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

