

SP. No.

Yamatake Corporation

製品仕様書
SPECIFICATIONS

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

[1] NUMBER OF PLUNGER

CODE	NUMBER OF PLUNGER
2	2
3	3
4	4

[2] TYPE OF ACTUATOR

CODE	TYPE OF PLUNGER
0	BEVEL
1	ROLLER

[3] LOCATION OF CONDUIT HOLES, FURNISHED

CODE	LOCATION OF CONDUIT HOLES	CONDUIT PARTS
4	MOUNTING SURFACE (2) AND SIDE SUEFACE OF HOUSING (2)	ASSEMBLED : 2 O-RINGS (G30) 2 EACH PLUGS AND SEALS IN MOUNTING SURFACE 2 PLUGS IN SIDE SURFACE OF HOUSING

[4] SCRAPER MATERIAL

CODE	MATERIAL
S	NITRILE RUBBER
V	FLUORINE RUBBER

[5] CONTACT MATERIAL AND ELECTRICAL RATINGS
(STANDARD AND IEC ELECTRICAL RATINGS ARE BOTH INDICATED ON THE SWITCH BODY.)

CODE	CONTACT MATERIAL	ELECTRICAL RATING	EN60947-5-1, IEC 60947-5-1
~	SILVER	Y15 5A-AC250V	Y226 1.5A-AC250V AC-15 0.5A-DC 30V DC-12 △CE
K	GOLD ALLOY	Y93 0.1A-AC125V 0.1A-DC 30V	Y93 0.1A-AC125 V AC-12 0.1A-DC 30 V DC-12 △CE

6	04								
5	04	04	EC006-0319	4,18,'06	SAKIYAMA	TOMITA			
4	01	03	JE005-1312	6,22,'05	KANAI	TOMITA			
3	00	02	JE004-1328	9,10,'04	TATSUHARA	TOMITA			
2	04	01	JE003-1240	2,19,'03	TATSUHARA	TOMITA			
頁	改番	改番	来歴	日付	担当	検閲	日付	図番	改番
PAGE	REV.	REV.	RECORD	DATE	BY	APPD.	DATE	NO.	REV.

作成DR. UEDA 10.21, '99		尺度 SCALE 	記入のない公差 TOL. UNLESS NOTED ~
検図CHK. K.ABE 10.21, '99	形番 MODEL	LDVS-5*****	
認可APPD MURATA 10.22, '99	名称 NAME	MULTIPLE LIMIT SWITCH	
日付 DATE 10.22, '99	図番 NO.	AD53197E	改番 REV. 1/6 04

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1. STANDARDS

- Conform to; JIS C 8201-5-1 \triangle IEC 60947-5-1 \triangle
- Approved by; EN60947-5-1(TÜV)

2. STRUCTURE

- Type of Contact; C (SPDT) \triangle
- Shape of Terminal; Screw (M3 pan head screw with lock washer)
- Shape of Contact; Silver ; Rivet
Gold Alloy; Cross point
- Protective Structure; IP67 (IEC 60529) \triangle
- Environment pollution degree; Degree 3 (EN60947-5-1)
- Protection class; Class I (IEC 60536) \triangle

3. ELECTRICAL CHARACTERISTICS

- \triangle Rated operational voltages (Ue), Utilization category, Rated operational current (Ie) and Conventional free air thermal current (Ith)

Point of contact material	Silver contacts		Gold plated contacts	
	Rated operational voltage (Ue)	Utilization category	Rated operational current (Ie)	Conventional free air thermal current (Ith)
	250VAC	DC-12	0.5A	5A
	30VDC	AC-12	1.5A	5A
	250VAC	DC-12	0.1A	0.5A
	30VDC	AC-12	0.1A	0.5A

- The value of therated frequency; 45~65Hz and "dc"
- Rated insulation voltage (Ui); 250 VAC



- \triangle Note 1. Dielectric test voltage between each terminal and the enclosure: 1500VAC (50 to 60Hz, for 5 seconds, leak current 1mA)

- \triangle Dielectric test voltage between the open contacts: 600VAC (50 to 60Hz, for 1 minute, leak current 1mA)

- Rated impulse withstand voltage (Uimp); 4000V

Point of contact material	Contact Resistance	Minimum Contact Operating Current
Silver contacts	50 mΩ max. (initial) Measured by the voltage drop method at 6 to 8 VDC 1 A.	24V-10mA, 12V-20mA
Gold plated contacts	100 mΩ max. (initial) Measured by the voltage drop method at 6 to 8 VDC 0.1A.	5V-10mA

- Short circuit protective device; Fast acting fuse 10A (Bussmann ABC10 or equivalent)
- Conditional short-circuit current; 100A (at resistive load)
- Switching overvoltage; Category III (IEC 60204-1) \triangle
- Conditional short-circuit current;

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04	CHANGED	4,18,'06	SAKIYAMA	TOMITA
01	IEC529 etc.	2,19,'03	TATSUHARA	TOMITA

4. MECHANICAL CHARACTERISTICS (Value at 25° dog angle)

- Actuator Strength; Withstand 5 times O.F. in the operating direction for 1 minute.
- Terminal Strength; Withstand 0.6N·m tightening torque applied for 1 minute.
- Shock;
 - Silver Contacts; 600 m/s²
 - Gold Alloy Contacts; 400 m/s²
 Misoperation of the contact shall be 1 ms max. in the free position and the total travel position.
- Vibration; Peak-to-peak amplitude 1.5 mm Vibration frequency 10 to 55 Hz for continuous 2 hours.
 - Misoperation of the contact shall be 1 ms max. in the free position and the total travel position.
- Allowable Operating Speed; 0.07 mm/s to 0.5 m/s
 - The lowest speed; Unstable condition of the contact shall be 0.1s max.
 - The highest speed; The actuator shall not damage.
- Mechanical Operating Frequency; 120 cycles/minute max.

5. LIFE

- Mechanical Life; 5000k cycles min. at "O.T." of 70 to 100% of the rating
- Electrical Life;
 - The conditions at operation frequency of 20 cycles a minute are satisfied.

Contact material	Condition	Operation cycle
Silver	5A-250 VAC 0.4A-125 VDC ; 0.2A-250 VDC	50K cycles min.
	3A-250 VAC 0.4A- 30 VDC 0.2A-125 VDC ; 0.1A-250 VDC	100K cycles min.
	Gold Alloy	0.1A-125 VAC 0.1A- 30 VDC

6. ENVIRONMENTAL CHARACTERISTICS

- Operating Temperature; -10 to +70 °c (at no freezing)
- Operating Humidity ; 98 %RH max.

7. MOUNTING

- Recommended Tightening Torque
 - For mounting the switch to panel ; 6 to 8 N·m (M6 cap screw)
 - For mounting the terminal to switch ; 0.4 to 0.6 N·m (M3)
 - For mounting the cover to housing ; 1.3 to 1.7 N·m (M4)
 - For mounting the plug to conduit hole in mounting surface ; 0.6~0.8 N·m (G1/2)
 - For mounting the plug to conduit hole in side surface ; 0.2~0.5 N·m (G1/2)

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改番REV.	改番REV.	3/6

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PRECAUTIONS

- (1) MOUNTING
 - ・ TIGHTEN EACH PORTION OF LIMIT SWITCH AT REASONABLE TORQUE SPECIFIED IN THIS SPECIFICATION.
OVER-TIGHTENING MAY DAMAGE THE SCREW THREADS OR OTHER PARTS.
LOOSE-TIGHTENING MAY CAUSE POOR SEALING OF SWITCH AND DECREASE IN VARIOUS PERFORMANCE.
 - ・ DO NOT LEAVE OR USE THE SWITCH WITH COVER AND CONDUIT LEFT OPEN.
INGRESS OF WATER OR DUST MAY CAUSE OPERATION FAILURE.
 - ・ DO NOT USE SILICONE RUBBER INSULATED CABLE, SILICONE ADHESIVES OR SILICONE-CONTAINED GREASE. THEY MAY CAUSE ELECTRICAL CONTACT FAILURE.
- (2) WIRING
 - ・ DO NOT PERFORM WIRING WHILE POWER IS ON. IT MAY CAUSE ELECTRICAL SHOCK OR SUDDEN MACHINE START.
 - ・ USE INSULATED CRIMP TERMINALS FOR WIRING, AND TAKE CARE THAT THE TERMINAL AND WIRE SHALL NOT TOUCH COVER. FAILURE TO DO SO, MAY CAUSE DIFFICULTY IN COVER MOUNTING OR CAUSE EARTHING TROUBLE.
 - ・ USE SEAL CONNECTOR (SEPARATE ORDER, PA1 SERIES) OR FLEXIBLE PIPE (PA3 SERIES) FOR CONDUIT TO GET SEALING PERFORMANCE NOT LESS THAN IP67 OR EQUIVALENT.
 - ・ BE SURE TO MOUNT THE COVER AND CONDUIT TIGHTLY.
POOR MOUNTING MAY CAUSE INSULATION FAILURE DUE TO DECREASE IN SEALING PERFORMANCE. AS A RESULT, THE SWITCH WOULD NOT SATISFY ITS OPERATION PERFORMANCE.
- (3) ADJUSTMENT
 - ・ DO NOT APPLY EXCESSIVE FORCE (MORE THAN 5 TIMES OF OPERATING FORCE) TO THE ACTUATOR BEYOND THE LIMIT OF ITS TRAVEL. IT MAY BREAK THE SWITCH.
 - ・ OVERTRAVEL MUST BE 70 TO 100% OF THE RATED VALUE.
SMALL OVERTRAVEL MAY CAUSE CHATTERING OF CONTACT OR CONTACT FAILURE BY VIBRATION OR SHOCK.



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01	DELETE	2,19,'03	TATSUHARA	TOMITA		
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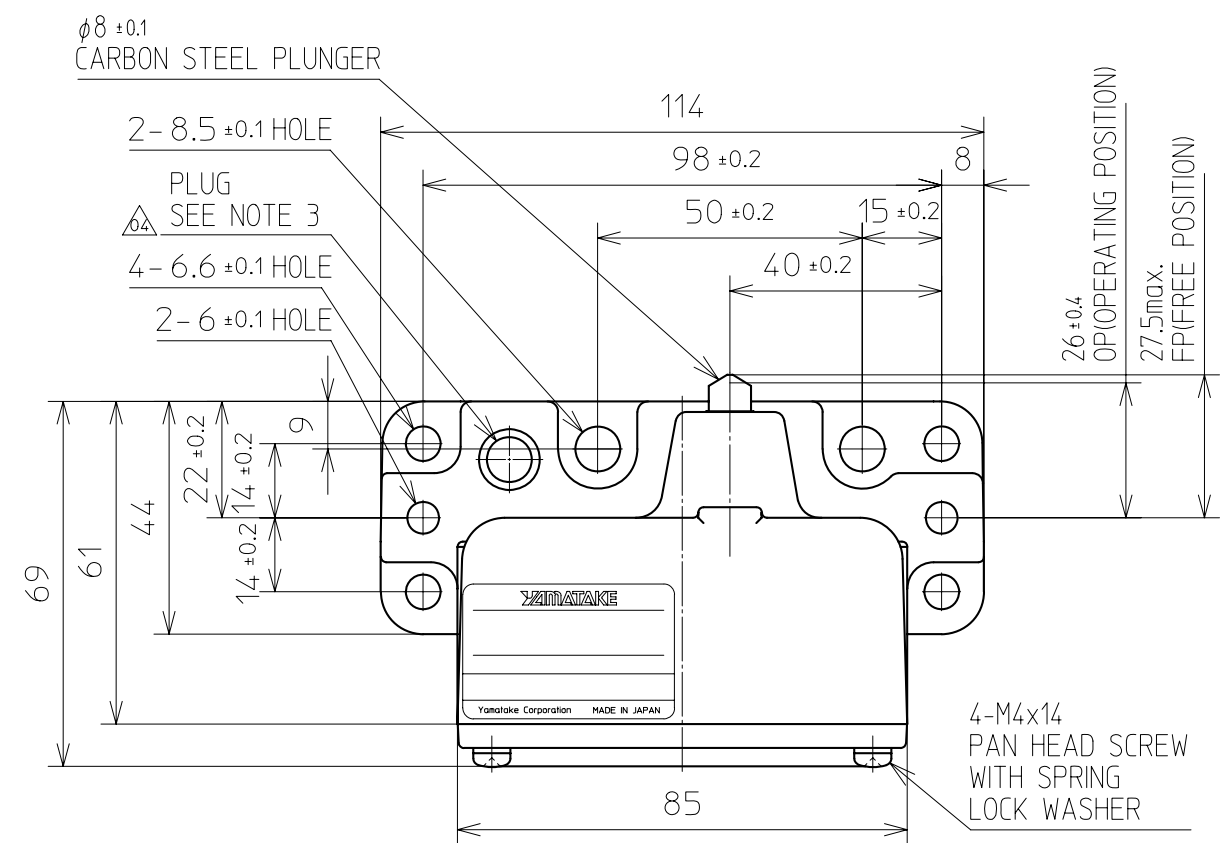
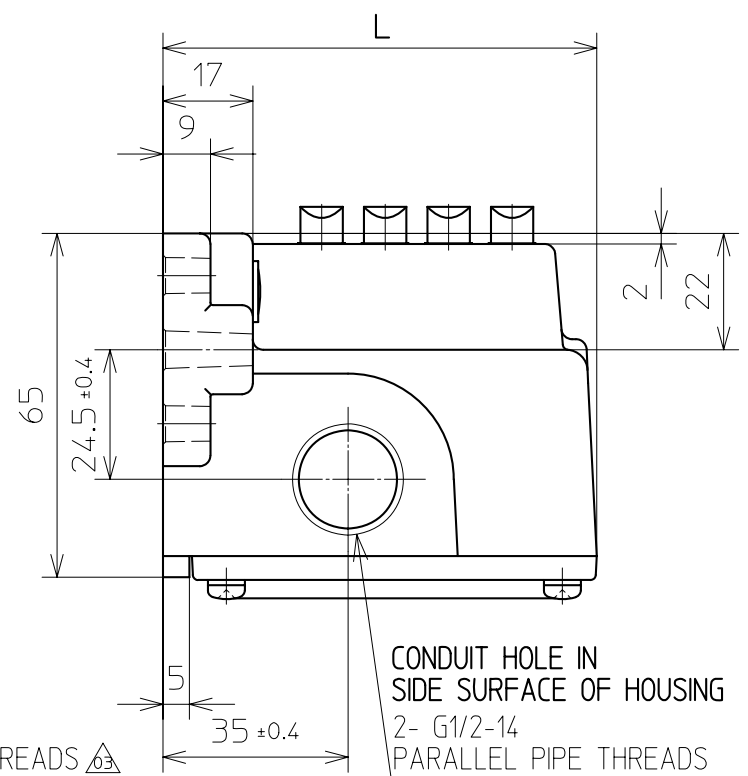
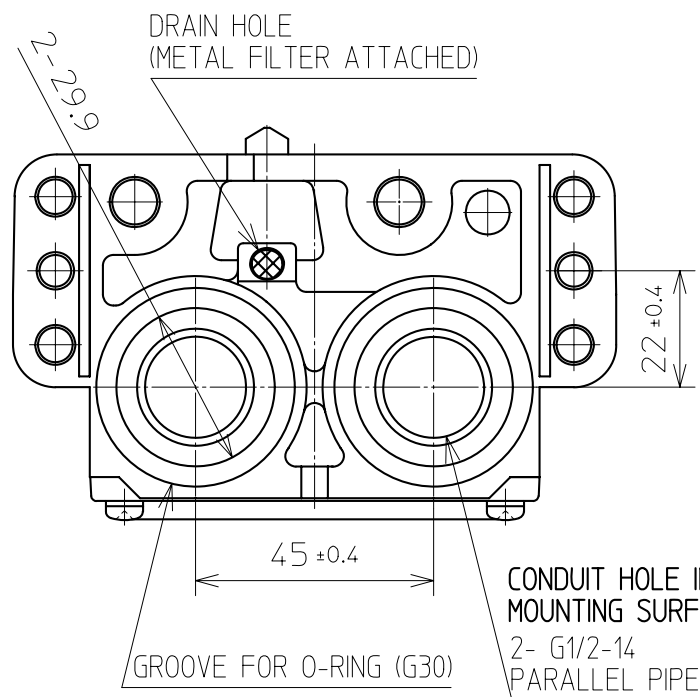
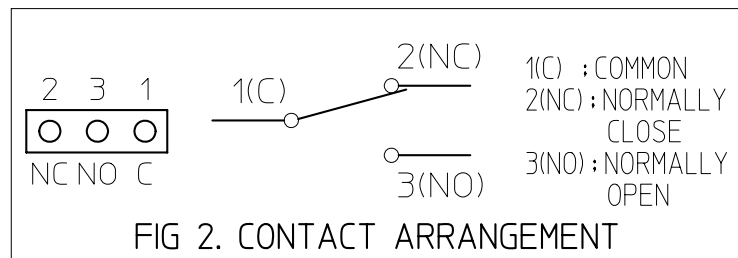
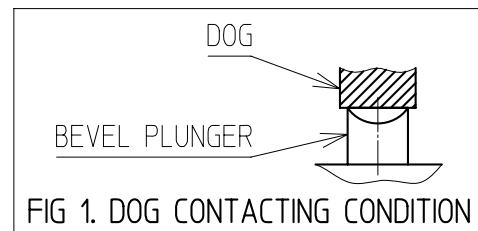
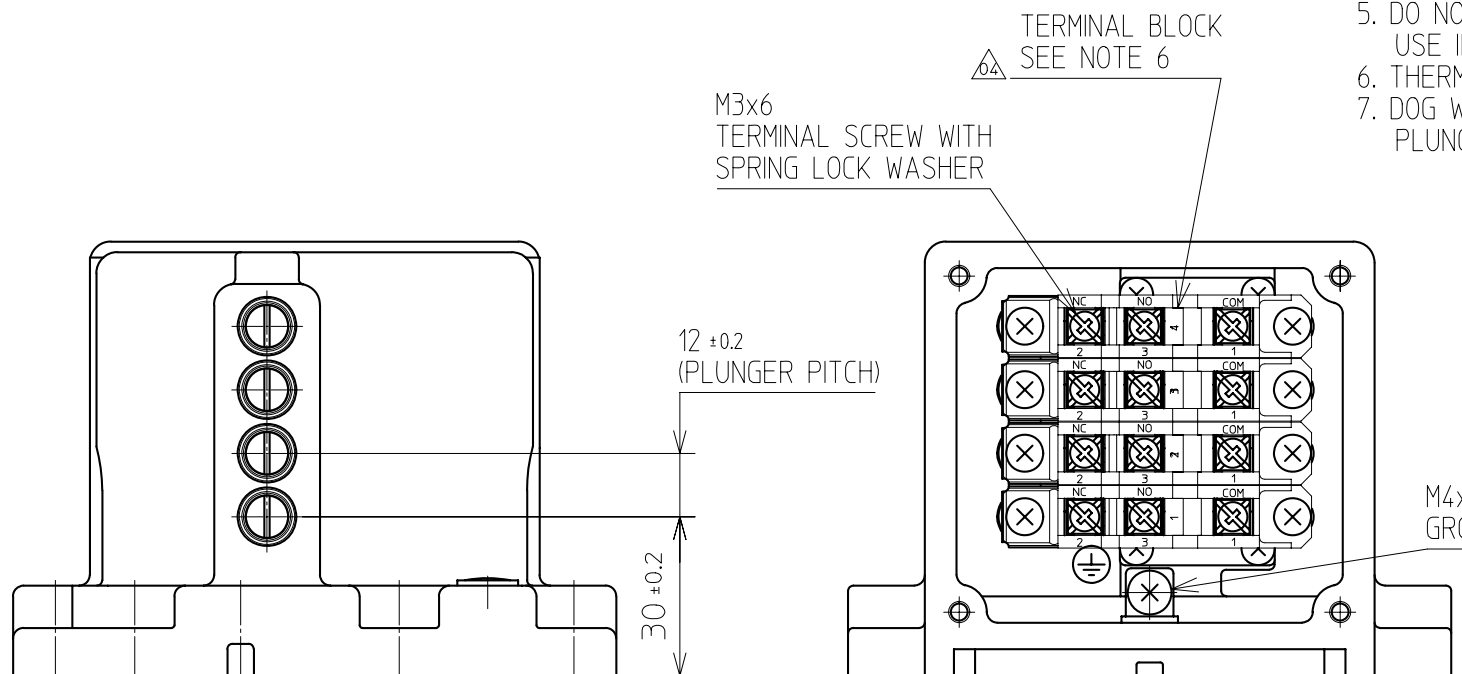
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- NOTES
1. HOUSING AND COVER ARE MADE OF ALUMINUM ALLOY FINISHED WITH GRAY HAMMER TONE PAINT.
 2. WHEN PIPING, REMOVE SEALING PLUG ASSEMBLED IN CONDUIT.
 3. WHEN USING WITH MOUNTING SURFACE UPWARD, REMOVE SEALING PLUG TO PREVENT COOLANT FROM STAYING IN CONCAVITY.
 4. USE LEAD WIRES HAVING 0.5 TO 2.5mm² CROSS SECTIONAL AREA WITH RING OR SPADE TYPE INSULATED CRIMP TERMINAL FOR M3 SCREW. THE WIDTH OF TERMINAL SHALL BE LESS THAN 7.5 .
 5. DO NOT WIRE MORE THAN 2 WIRES TO EACH TERMINAL WITHOUT CRIMP TERMINAL IN CASE OF MULTIPLE WIRES, USE INSULATED RING TYPE CRIMP TERMINAL FOR M3 SCREW (WIDTH OF TERMINAL TIP SHALL BE 7.5 MAX.) .
 6. THERMINAL IDENTIFICATIONS AND SWITCH ARE MARKED ON TERMINAL BLOCKS NUMBERS.
 7. DOG WIDTH SHALL BE MORE THAN 8.
- PLUNGER SHOULD CONTACT WITH MATING DOG WITH ITS TOTAL WIDTH (REFER TO FIG 1) .

LDVS-5*0***
(BEVEL PLUNGER)



CHARACTERISTICS

OPERATING FORCE	14.7N	max.
RELEASE FORCE	3.0N	min.
PRETRAVEL	1.5	max.
MOVEMENT DIFFERENTIAL	0.2	max.
OVERTRAVEL	3	min.

NUMBER OF PLUNGER	L
2	58
3	70
4	82

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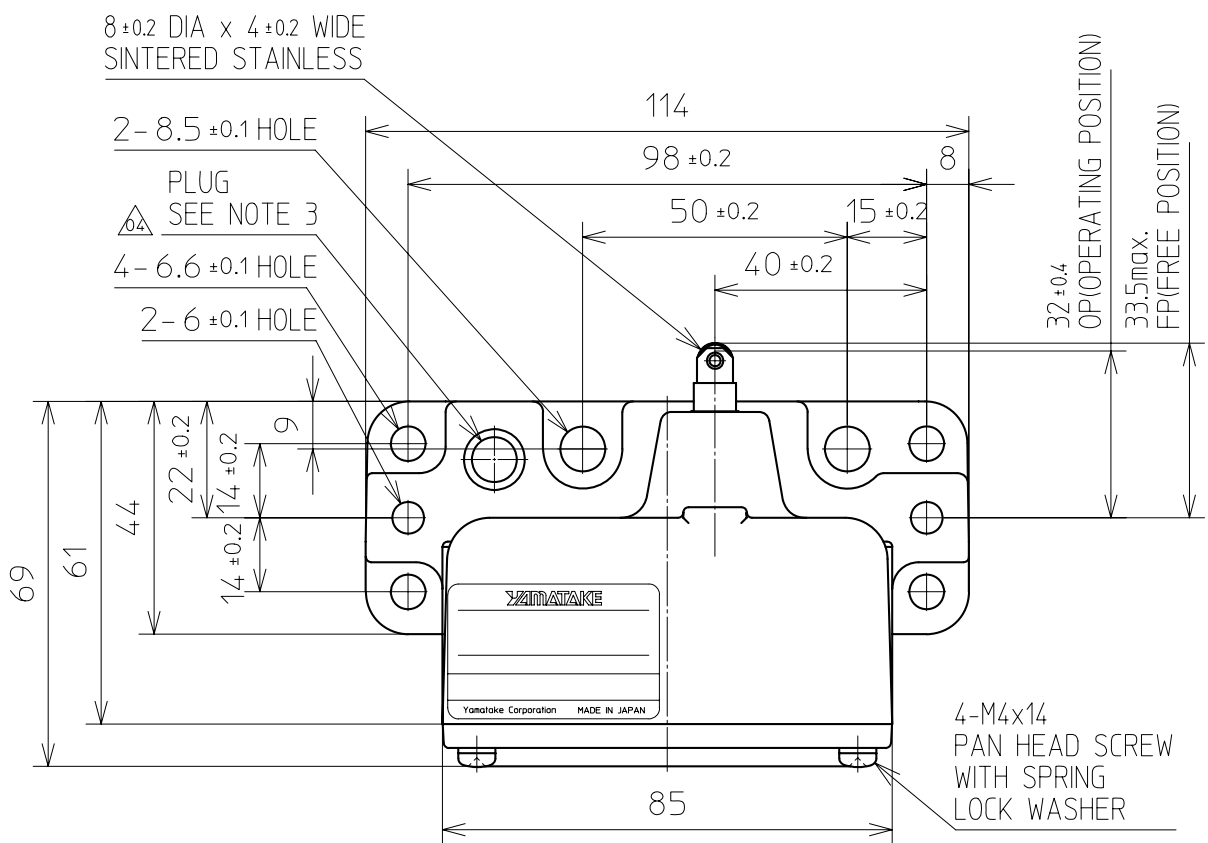
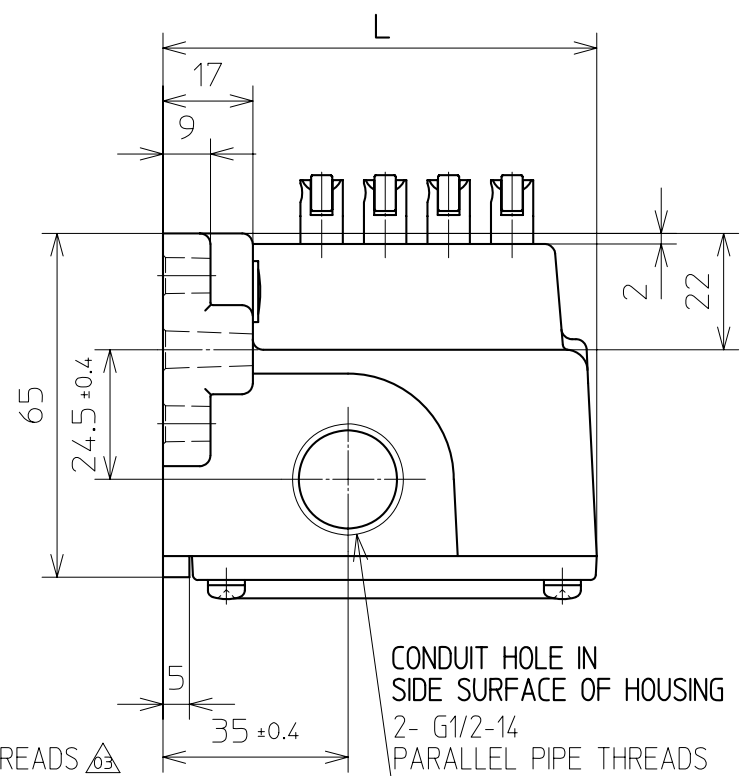
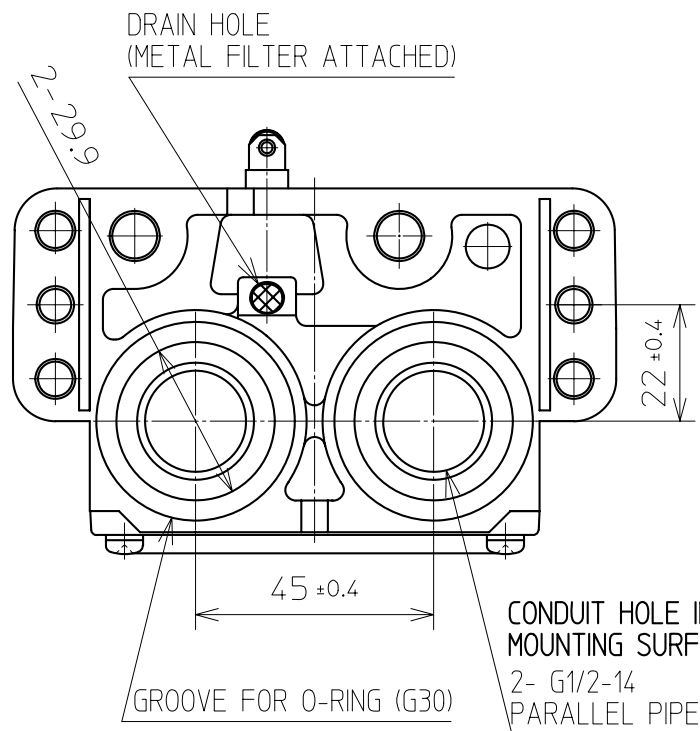
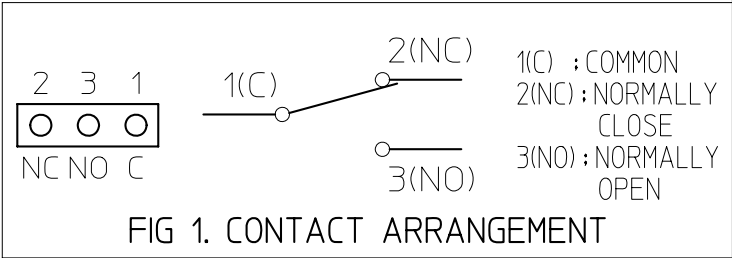
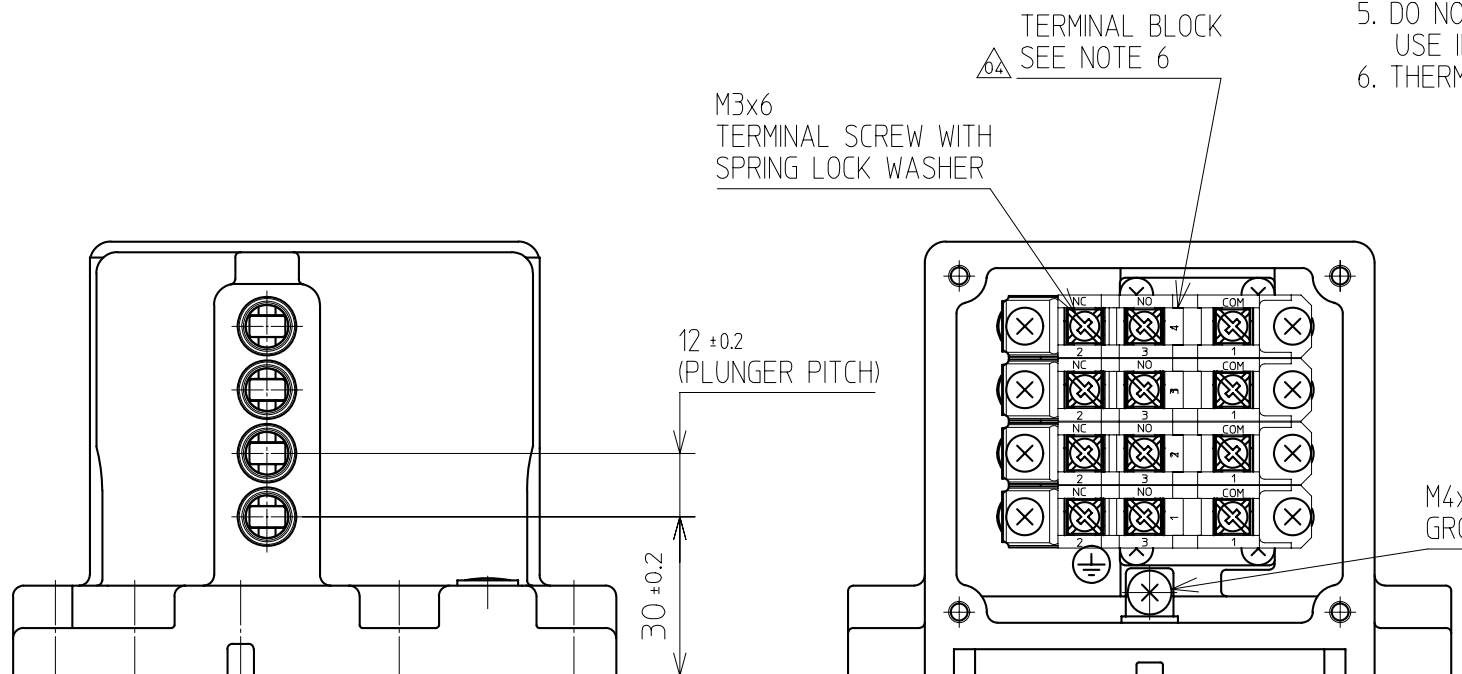
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LDVS-5***1*****
(ROLLER PLUNGER)



CHARACTERISTICS

OPERATING FORCE	14.7N	max.
RELEASE FORCE	3.0N	min.
PRETRAVEL	1.5	max.
MOVEMENT DIFFERENTIAL	0.2	max.
OVERTRAVEL	3	min.

NUMBER OF PLUNGER	L
2	58
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“RESTRICTIONS ON USE”

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment.

Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.

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