FO-55113-A

HONEYWELL PART NUMBER
LDVS-5 SERIES

REV	DOCUMENT	CHANGED BY	CHECK
A	0011334	PM 24MAR05	AK

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
2	SIDE SUEFACE OF HOUSING (2)	ATTACHED : 1 PLUG
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

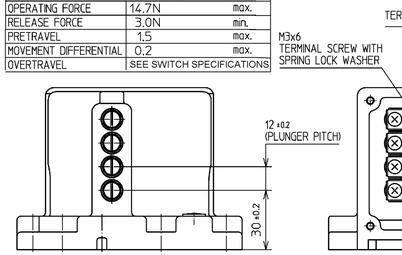
[5] CONTACT MATERIAL AND ELECTRICAL RATINGS
(STANDARD AND IEC ELECTRICAL RATINGS ARE BOTH INDICATED ON THE SWITCH BODY.)

CODE	CONTACT MATERIAL	ELECTRICAL RATING	EN60947-5-1, IEC 60947-5-1 [3] [4]
~	SILVER	Y15 5A-AC250V	Y226 ▲CE 1.5A-AC250V AC-15 0.5A-DC 30V DC-12
K	GOLD ALLOY	Y93 0.1A-AC125V 0.1A-DC 30V	Y93 ▲CE 0.1A-AC125 V AC-12 0.1A-DC 30 V DC-12

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

NUMBER OF PLUNGER	L
2	58
3	70
4	82

CHARACTERISTICS		
OPERATING FORCE	14.7N	max.
RELEASE FORCE	3.0N	min.
PRETRAVEL	1.5	max.
MOVEMENT DIFFERENTIAL	0.2	max.
OVERTRAVEL	SEE SWITCH SPECIFICATIONS	



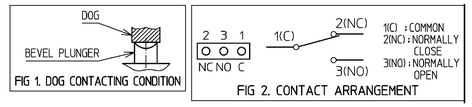
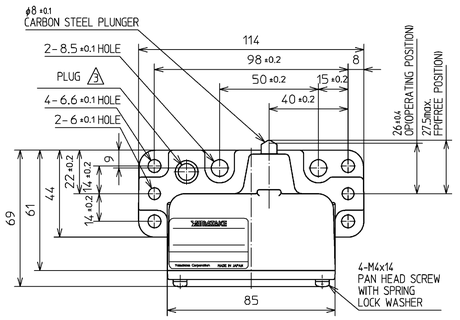


FIG 1. DOG CONTACTING CONDITION

FIG 2. CONTACT ARRANGEMENT



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) .

TOLERANCE UNLESS NOTED: +/- 0.4

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

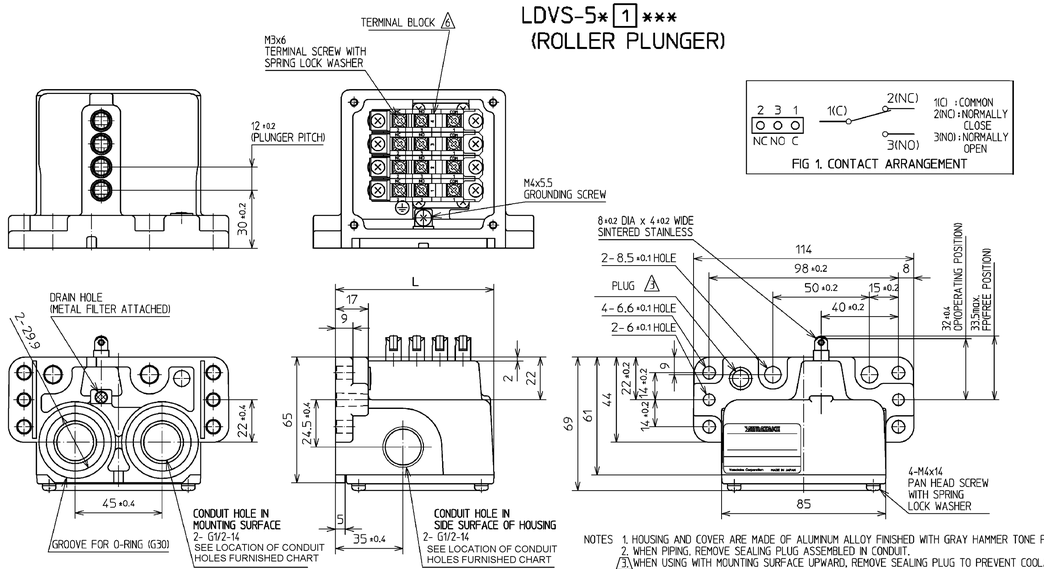


FIG 1. CONTACT ARRANGEMENT

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.

CHARACTERISTICS		
OPERATING FORCE	14.7N	max.
RELEASE FORCE	3.0N	min.
PRETRAVEL	1.5	max.
MOVEMENT DIFFERENTIAL	0.2	max.
OVERTRAVEL	SEE SWITCH SPECIFICATIONS	

NUMBER OF PLUNGER	L
2	58
3	70
4	82

TOLERANCE UNLESS NOTED: +/- 0.4

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 FAILUER 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 CANTACT FAILURE BY VIBRATION OR SHOCK.

SWITCH SPECIFICATIONS

1. STANDARDS
- Conform to: JIS C 4508 IEC 60947-5-1 [3]
- Approved by: EN60947-5-1(TÜV)

2. STRUCTURE
- Type of Contact: SPDT
- 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) [3]
- Environment pollution degree: Degree 3 (EN60947-5-1)

3. ELECTRICAL CHARACTERISTICS
(1) GENERAL PERFORMANCE
- Insulation Resistance and Dielectric Strength.

Portions to be measured	Insulation Resistance (500VDC megger)	Dielectric Strength (50~60Hz, for 1 minute)
Between uncannected terminals	100 MΩ min. [3]	600 VAC
Between each terminal and non-live metal part	100 MΩ min. [3]	1500 VAC
Between each terminal and ground	100 MΩ min. [3]	1500 VAC

- Contact Resistance
Silver Contacts;
50 mΩ max. (initial) Measured by the voltage drop method at 6 to 8 VDC 1
Gold Alloy Contacts,
100 mΩ max. (initial) Measured by the voltage drop method at 6 to 8 VDC 0.
- Minimum Contact Operating Current
Silver Contacts; 24V-10mA, 12V-20mA
Gold Alloy Contacts, 5V-10mA

(2) PERFORMANCE PER EN60947-5-1 AND IEC 60947-5-1 [3]

- Rated operational voltages,	
Silver Contacts,	250VAC, 30VDC
Gold Alloy Contacts,	125VAC, 15VDC
- The value of therated frequency,	45~65Hz and "dc"
- Rated insulation voltage (Ui),	250 VAC
- Rated impulse withstand voltage (Uimp),	4000V
- Conventional free air thereal current (Ith)	
Silver Contacts,	5A
Gold Alloy Contacts,	0.5A
- 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) [3]

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 satisfyed.

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	2000K cycles min.

6. ENVIRONMENTAL CHARACTERISTICS
- Operating Temperature, -10 to +70 ℃ (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)

DESIGN UNITS: MM
TOLERANCES UNLESS NOTED:

NO PLACE	X ±	1.000
ONE PLACE	.X ±	0.4
TWO PLACE	.XX ±	0.15
THREE PLACE	.XXX ±	0.005
FOUR PLACE	.XXXX ±	0.0050
ANGLES	X ±	3

THIRD ANGLE PROJECTION

DRAWN	VKR	24FEB05
CHECK	AK	24MAR05

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INTERPRET PER ASME Y14.5M-1994
OTHER HONEYWELL ENGINEERING STANDARDS MAY APPLY

RASTER

Honeywell

TITLE: MULTIPLE LIMIT SWITCH

SIZE D | TYPE I | DRAWING NAME: LDVS-5 SERIES CHART 1 | REV A

SCALE NTS | SHEET 1 OF 1