Explosion-Proof Packing Connectors (Standard)

Model no.	Protective pipe dimensions	Compatible cable diameter
2PA-JEX108L	G1/2	ϕ7.5～8.5
2PA-JEX109L		ϕ8.5～9.5
2PA-JEX110L		ϕ9.5～10.5
2PA-JEX111L		ϕ10.5～11.5
2PA-JEX112L		ϕ11.5～12.5
2PA-JEX113L		ϕ12.5～13.5
2PA-JEX208L	G3/4	ϕ7.5～8.5
2PA-JEX209L		ϕ8.5～9.5
2PA-JEX210L		ϕ9.5～10.5
2PA-JEX211L		ϕ10.5～11.5
2PA-JEX212L		ϕ11.5～12.5
2PA-JEX213L		ϕ12.5～13.5

Auxiliary Actuators

Type	Shape	Lever length	Model no.	Roller material	Lever material	Method of attaching lever
roller lever		38.1mm	6PA-J63	Black nylon	Corrosion-resistant aluminum	Hexagon socket head bolt
		38.1mm	6PA-J78	Brass	Corrosion-resistant aluminum	Hexagon head bolt
		38.1mm	LS-6PA44-002	Black nylon	Stainless	Hexagon socket head bolt
		38.1mm	LS-6PA44-004	Brass	Stainless	Hexagon socket head bolt
		30mm	6PA-J105	Black nylon	Corrosion-resistant aluminum	Hexagon socket head bolt
		30mm	LS-6PA107	Brass	Corrosion-resistant aluminum	Hexagon socket head bolt
		30mm	LS-6PA44-102	Black nylon	Stainless	Hexagon socket head bolt
		30mm	LS-6PA44-104	Brass	Stainless	Hexagon socket head bolt
Adjustable roller lever		26.0～89.0mm	6PA-J79	Black nylon	Stainless/ Corrosion-resistant aluminum	Hexagon socket head bolt
		26.0～89.0mm	6PA-J119	Brass	Stainless/ Corrosion-resistant aluminum	Hexagon socket head bolt

Please read the "Terms and Conditions" from the following URL before ordering or use:

http://www.azbil.com/products/bi/order.html

Specifications are subject to change without notice.

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URL:http://www.azbil.com/

Printed in Japan. (ED)
1st Edition: Issued in Jan.2011

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Please note our name change from Yamatake Corporation to Azbil Corporation as of April 1, 2012

In consideration of the environment, and to avoid wasting paper, the old company name may appear on some documents.

No.CP-PC-2261E

Explosion-Proof Switches

Compliant with IEC Standards

Vertical Explosion-Proof Switches **LX7000 Series**

2-Point Detection Explosion-Proof Switches **VCX-7000 Series**

Ex d e IIC T6 certified

Meets Global Standards

Limit Switches Compliant with IEC Explosion-Proof Standards

Meeting global standards through continued safe and reliable product performance

Through a combination of explosion-proof internal switches and a housing with an increased-safety explosion-proof structure, these limit switches have been certified as explosion-proof (Ex d e IIC T6).

Product Lineup

A wide range of actuators

The roller lever actuator can be used in combination with all general-purpose limit switch levers.

Compliant with a range of cable lead-in types

- Conduit type: screw-in conduit and lead-in insulated cable
- Packing type (TIIS explosion-proof product) : cable lead-in using explosion-proof packing connectors
- For products that have been certified as explosion-proof by international standards, metric fine screw threads※ are also available for use in combination with cable glands that comply with IEC explosion-proof standards.

※M20×1.5 for the LX7000 series, and M25×1.5 for the VCX-7000 series.

IEC Explosion-Proof Standards Compliance

IEC explosion-proof standards are increasingly being accepted as global standards. Because we ensure compliance with IEC standards, our switches have also been certified as meeting Japanese explosion-proof standards, as well as those of other areas such as Europe and Asia (China, South Korea).

External Standards

	TIIS/NK (Japan)	NEPSI (China)	KOSHA (South Korea)	ATEX (Europe)	IECEx (※)
LX7000 series	●	●	●	●	●
LX7000-R series	●	–	–	–	–
VCX-7000 series	●	●	●	●	●
VCX-7000-R series	●	–	–	–	–

※IECEx: Valid in certain IECEx member countries.
Please check whether applicable.

Outstanding Explosion-Proof Performance

Ex d e IIC T6 certified

By combining internal switches having an explosion-proof structure with a housing having an increased-safety explosion-proof structure, these switches meet IIC T6 explosion-proof standards and can be used in hydrogen gas atmospheres. They can also be used in Zone 1 (hazardous area) applications.

Explosion-Proof Performance: IEC Explosion-Proof Standards
Explosive Gas Group Classification and Temperature Levels

Temperature level		T1	T2	T3	T4	T5	T6
Maximum surface temperature of electrical device		450℃	300℃	200℃	135℃	100℃	85℃
Technological standards (group classification)	IIA	Ammonia Carbon monoxide Ethane Toluene Propane Methane	Ethanol Butanol Butane Acetyl-acetone Vinyl chloride	Hexane Gasoline Kerosene Pentane	Acet-aldehyde Trimethyl-amine		Ethyl nitrite
	IIB	Hydrogen cyanide Acrylo-nitrile Coal gas	Furane Ethyl acrylate Ethylene	Dimethyl ether Cyclo-hexane Isoprene			
	IIC	Hydrogen	Acetylene			Carbon dioxide	Ethyl nitrate

Installation Environment

Reliable and robust for outdoor installation

With an aluminum alloy housing, anti-corrosion treatment, and baked finish, these switches are weather-resistant. Silicone rubber has been used in sealing materials for its excellent weather-proofing properties, and all external screws are made of stainless steel.

Corrosion-Resistant

Corrosion-resistance prevents salt damage

The housing uses a corrosion-resistant aluminum alloy, with further anti-rust treatment and a baked acrylic finish to prevent corrosion rust, affording improved workability during maintenance and checks.

LX7000 series: Available for all models having a 1LX, 2LX or 5LX head.
VCX-7000 series: Available for all models.

Results of 300 hours of salt spray testing

Standard model

Corrosion-resistant model

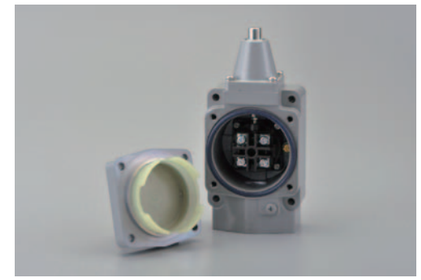
Reliable Switching of Very Low Loads

Switches with gold contacts are available to prevent the corrosion of contacts by atmospheric gases and other elements.

Easily-Removable Cover

When the housing and cover were redesigned to make an explosion-proof container with increased safety, the cover was made so that it can be mounted and removed easily, without pinching wires between the cover and housing during wiring or inspections.

Note:
The stipulations for joint surface gap depths and gaps that prevent flame from spreading have been relaxed on increased-safety explosion-proof enclosures, but they can be used for Zone 1 and Zone 2 applications.



Vertical Explosion-Proof Switches Compliant with IEC Standards

LX7000 Series

- Five different head types are available (roller lever, plunger, roller plunger, fork lever lock, nondirectional movement) according to customer requirements for movement mechanisms. In addition, for the roller lever type, selection can be made from general-purpose limit switch levers according to attachment conditions.
- For the LX7000 series, head orientation can be changed to either front, back, left or right (4-directional).
- For the roller lever type (1LX), the plunger type (2LX) and the roller plunger type (5LX), corrosion-resistant switches are available (see page 3 for details).
- A corrosion-resistant explosion-proof packing connector is also available for use in combination with the increased-safety packing corrosion-resistant type.

Note: Please contact one of our sales representatives for information on corrosion-resistant types.

External standards	Explosion-proof structure	Approval no.
TIIS (Japan)	Ex d e IIC T6	TC18776/TC18778※
NEPSI (China)	Ex d e IIC T6	GYJ101011
KOSHA (South Korea)	Ex d e IIC T6 IP67	09-AV4BO-0327
ATEX (Europe)	II 2G Ex d e IIC T6	KEMA09ATEX0107
IECEx	Ex d e IIC T6 Gb	IECEx KEM 09.0040
NK (shipping)	Ex d e IIC T6	09T608 (type test no.)

※TC18776 for 1LX, TC18778 for non-1LX

Model Numbers

				External standards			
Head type	Actuator	Cable lead-in	Contact material	TIIS・NK	NEPSI	KOSHA	ATEX
Roller lever	Standard roller lever	G1/2	Silver alloy	1LX7001-J	1LX7001-P	1LX7001-S	1LX7001
			Gold-plated	1LX7001-JK	1LX7001-PK	1LX7001-SK	1LX7001-K
		Increased-safety packing	Silver alloy	1LX7001-R			
			Gold-plated	1LX7001-RK			
		M20	Silver alloy		1LX7001-Q	1LX7001-V	1LX7001-C
			Gold-plated		1LX7001-QK	1LX7001-VK	1LX7001-CK
	No lever	G1/2	Silver alloy	1LX7002-J	1LX7002-P	1LX7002-S	1LX7002
			Gold-plated	1LX7002-JK	1LX7002-PK	1LX7002-SK	1LX7002-K
		Increased-safety packing	Silver alloy	1LX7002-R			
			Gold-plated	1LX7002-RK			
		M20	Silver alloy		1LX7002-Q	1LX7002-V	1LX7002-C
			Gold-plated		1LX7002-QK	1LX7002-VK	1LX7002-CK
	Adjustable roller lever	G1/2	Silver alloy	1LX7003-J	1LX7003-P	1LX7003-S	1LX7003
			Gold-plated	1LX7003-JK	1LX7003-PK	1LX7003-SK	1LX7003-K
		Increased-safety packing	Silver alloy	1LX7003-R			
			Gold-plated	1LX7003-RK			
		M20	Silver alloy		1LX7003-Q	1LX7003-V	1LX7003-C
			Gold-plated		1LX7003-QK	1LX7003-VK	1LX7003-CK
Plunger	Plunger	G1/2	Silver alloy	2LX7001-J	2LX7001-P	2LX7001-S	2LX7001
			Gold-plated	2LX7001-JK	2LX7001-PK	2LX7001-SK	2LX7001-K
		Increased-safety packing	Silver alloy	2LX7001-R			
			Gold-plated	2LX7001-RK			
		M20	Silver alloy		2LX7001-Q	2LX7001-V	2LX7001-C
			Gold-plated		2LX7001-QK	2LX7001-VK	2LX7001-CK
	Roller plunger	G1/2	Silver alloy	5LX7001-J	5LX7001-P	5LX7001-S	5LX7001
			Gold-plated	5LX7001-JK	5LX7001-PK	5LX7001-SK	5LX7001-K
		Increased-safety packing	Silver alloy	5LX7001-R			
			Gold-plated	5LX7001-RK			
		M20	Silver alloy		5LX7001-Q	5LX7001-V	5LX7001-C
			Gold-plated		5LX7001-QK	5LX7001-VK	5LX7001-CK
Fork lever lock		G1/2	Silver alloy	6LX7001-J	6LX7001-P	6LX7001-S	6LX7001
			Gold-plated	6LX7001-JK	6LX7001-PK	6LX7001-SK	6LX7001-K
		Increased-safety packing	Silver alloy	6LX7001-R			
			Gold-plated	6LX7001-RK			
		M20	Silver alloy		6LX7001-Q	6LX7001-V	6LX7001-C
			Gold-plated		6LX7001-QK	6LX7001-VK	6LX7001-CK
Nondirectional movement		G1/2	Silver alloy	8LX7001-J	8LX7001-P	8LX7001-S	8LX7001
			Gold-plated	8LX7001-JK	8LX7001-PK	8LX7001-SK	8LX7001-K
		Increased-safety packing	Silver alloy	8LX7001-R			
			Gold-plated	8LX7001-RK			
		M20	Silver alloy		8LX7001-Q	8LX7001-V	8LX7001-C
			Gold-plated		8LX7001-QK	8LX7001-VK	8LX7001-CK

Notes:
- Please contact one of our sales representatives for information on model numbers with IECEx certification.

LX7000 Series Specifications

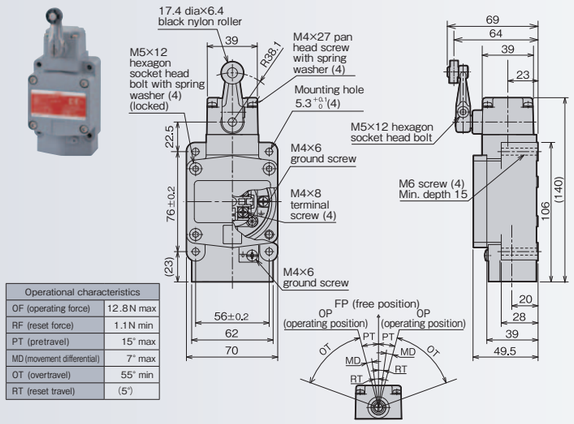
Item			Head type				
			Roller lever 1LX700□-□□	Plunger 2LX7001-□□	Roller plunger 5LX7001-□□	Fork lever lock 6LX7001-□□	Nondirectional movement 8LX7001-□□
Structure	Contact form		2-circuit double break (2CKT-DB×1)				
	Terminal type		M4 pan head screw with square washer				
	Contact material		Silver/gold-plated rivet				
	Explosion-proof structure		Internal switch: d (explosion-proof), housing: e (increased-safety explosion-proof)				
	Protective structure		IP67 (IEC 60529, JIS C 0920)				
Electrical performance	Electrical rating		Silver: 5A at 250 Vac, 0.8A at 125 Vdc, 0.4 A at 250 Vdc Gold-plated: 0.1A at 125 Vac, 0.1 A at 30 Vdc				
	Dielectric strength		Between continuous terminals: 600 Vac, 50/60 Hz for 1 minute Between each terminal and non-live metal part: 2000 Vac, 50/60 Hz for 1 minute Between each terminal and ground: 2000 Vac, 50/60 Hz for 1 minute				
	Insulation resistance		Min. 100 MΩ (by 500 Vdc megger)				
	Initial contact resistance		Silver: max. 50 MΩ (6–8 Vdc, thermal current 1 A, measured by voltage drop method) Gold-plated: max. 100 MΩ (6–8 Vdc, thermal current 0.1 A, measured by voltage drop method)				
	Recommended min. contact operating voltage/ current		Silver: 10 mA at 24 V, 20 mA at 12 V Gold-plated: 10 mA at 5 V				
Mechanical performance	Actuator strength		Withstands loads 5 times O.F. (operating direction for 1 minute)				
	Terminal strength		Withstands tightening torque of 1.5 N·m for 1 minute				
	Impact resistance		200 m/s², contacts open for 1 ms max. in free position and total travel position*1				
	Vibration resistance		1.5 mm peak-to-peak amplitude, frequency 10 to 55 Hz, 2 h continuously, contacts open for 1 ms max. in free position and total travel position				
	Allowable operating speed		1.0mm/s to 0.5m/s*2 At min. speed, unstable state of contacts lasts for 0.1 s max. At max. speed actuator is not damaged.				20mm/s to 0.3m/s
	Operating frequency		Max. 120 operations/minute		30 operations/ minute		120 operations/ minute
Life	Mechanical		Min. 4 million operations (with overtravel at 70 to 100% of rated value)		Min. 2 million operations		Min. 4 million operations
	Electrical		Silver: min. 200,000 operations, 5 A at 250 Vac, 0.8 A at 125 Vdc, 0.4 A at 250 Vdc (Min. 500,000 operations, 1 A at 250 Vac, 0.2 A at 125 Vdc, 0.1 A at 250 Vdc) Gold-plated: min. 2 million operations, 0.1 A at 125 Vac, 0.1 A at 30 Vdc				
Environment	Operating temperature		−10 to +60℃ (no freezing allowed)				
	Operating humidity		45–85%RH				
	Storage temperature		−10 to +60℃				
	Storage humidity		Max. 98% RH (with conduit section plug inserted)				
	Group and temperature class		IIC T6				
	Hazardous area classification		Zone 1 and Zone 2 hazardous areas				
Recommended tightening torque	Body		5–6 N·m (M5 hexagon socket head bolt)				
	Cover		5–6 N·m (M5 hexagon socket head bolt with spring washer)				
	Head		1.3–1.7 N·m (M4 pan head screw head with spring washer)				
	Terminals		1.3–1.7 N·m (M4 pan head screw with square washer)				
	Lever		4–5.2 N·m (M5 hexagon socket head bolt)				
	Internal ground		1.3–1.7 N·m (M4 binding head machine screw with spring washer)				
	External ground		1.3–1.7 N·m (M4 binding head machine screw with spring washer)				
Applicable cable size	Terminals	Stranded cable	Nominal cross-sectional area 0.5mm² to 1.5mm² (AWG20 to AWG16)				
		Single cable	Nominal cross-sectional area 0.5mm² to 1.5mm² (AWG20 to AWG16)				
	Internal ground		Uses M4 crimp-type terminal with insulating coating				
	External ground		Uses M4 crimp-type terminal Cables with a nominal cross-sectional area of up to 4mm² can be connected				

∗1: Not in free position for 8LX
∗2: When dock angle is 30° for 5LX.

External Dimensions

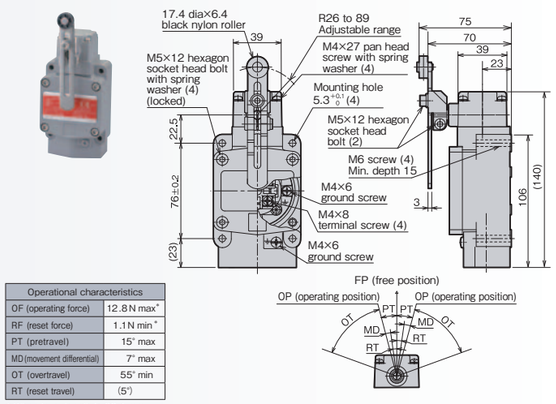
(unit : mm)

Standard roller lever type 1LX7001-□□



Operational characteristics	
OF (operating force)	12.8 N max
RF (reset force)	1.1 N min
PT (pretravel)	15° max
MD (movement differential)	7° max
OT (overtravel)	55° min
RT (reset travel)	(5°)

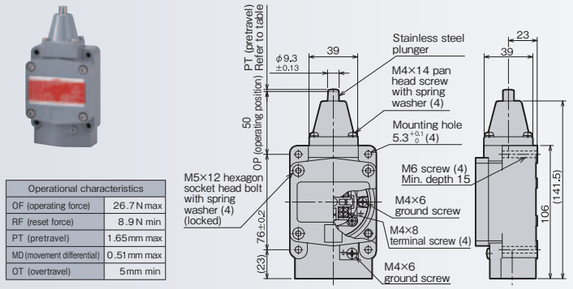
Adjustable roller lever type 1LX7003-□□



Operational characteristics	
OF (operating force)	12.8 N max*
RF (reset force)	1.1 N min*
PT (pretravel)	15° max
MD (movement differential)	7° max
OT (overtravel)	55° min
RT (reset travel)	(5°)

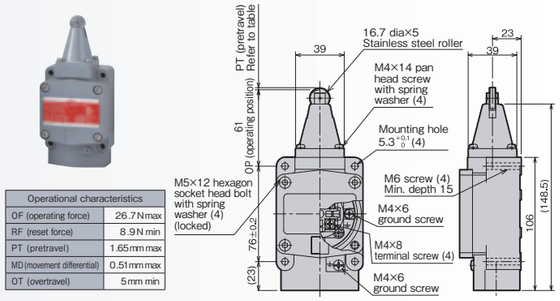
∗ When lever length is 38.1 mm

Plunger type 2LX7001-□□



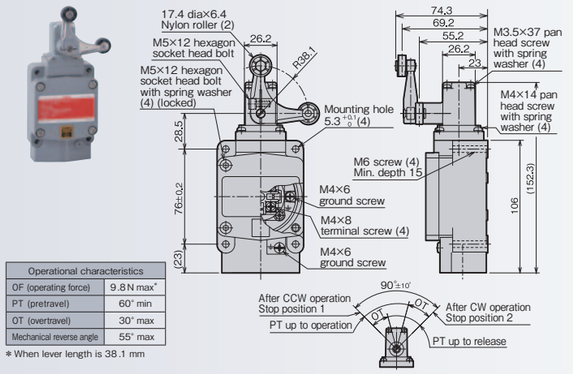
Operational characteristics	
OF (operating force)	26.7 N max
RF (reset force)	8.9 N min
PT (pretravel)	1.65 mm max
MD (movement differential)	0.51 mm max
OT (overtravel)	5 mm min

Roller plunger type 5LX7001-□□



Operational characteristics	
OF (operating force)	26.7 N max
RF (reset force)	8.9 N min
PT (pretravel)	1.65 mm max
MD (movement differential)	0.51 mm max
OT (overtravel)	5 mm min

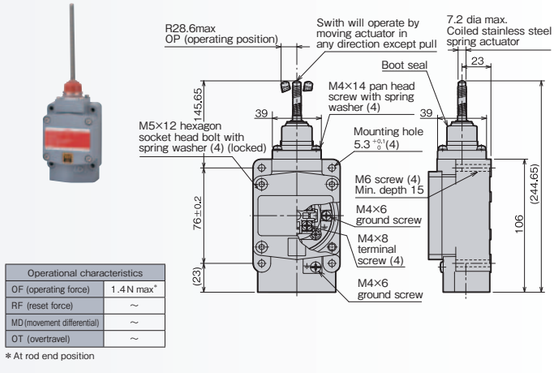
Fork lever lock type 6LX7001-□□



Operational characteristics	
OF (operating force)	9.8 N max*
PT (pretravel)	60° min
OT (overtravel)	30° max
Mechanical reverse angle	55° max

∗ When lever length is 38.1 mm

Nondirectional movement type 8LX7001-□□

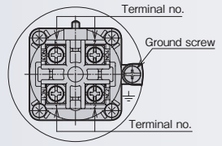


Operational characteristics	
OF (operating force)	1.4 N max*
RF (reset force)	～
MD (movement differential)	～
OT (overtravel)	～

∗ At rod end position

Circuit diagram

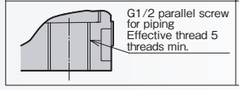
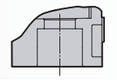
Detailed terminal diagram



Terminal connections

Terminal no.	Type
1	N.C.
2	N.C.
3	N.O.
4	N.O.

Conduit section details

1LX700□-[J]□□ (Increased-safety conduit type)	1LX700□-[R]□□ (Increased-safety packing type)
	

※ Tolerance for dimensions is ± 0.8 unless otherwise stated.

2-Point Detection Explosion-proof Switches Compliant with IEC Standards

VCX-7000 Series

- The center-neutral switch has different internal switches that move in accordance with the direction of the actuator movement. The simultaneous operation type switch has 2 internal switches that move simultaneously, and do not depend on the direction of the actuator movement.
- Actuators can be selected from general-purpose limit switch levers according to attachment conditions.
- The head orientation of the center-neutral switch can be switched to front or back (2-directional) and the head orientation of the simultaneous operation type can be switched to front, back, left or right (4-directional).
- For the VCX-7000 series, the corrosion-resistant type is available for all model numbers (see page 3 on corrosion resistance for more details).
- A corrosion-resistant explosion-proof packing connector is also available for use in combination with the increased-safety packing corrosion-resistant type.

Note: Please contact one of our sales representatives for detailed specifications on the corrosion-resistant type.

External standards	Explosion-proof structure	Approval no.
TIIS (Japan)	Ex d e IIC T6	TC18291
NEPSI (China)	Ex d e IIC T6	GYJ101010
KOSHA (South Korea)	Ex d e IIC T6 IP67	09-AV4BO-0326
ATEX (Europe)	II 2G Ex d e IIC T6	KEMA08ATEX0080
IECEx	Ex d e IIC T6	IECEx KEM 08.0032
NK (shipping)	Ex d e IIC T6	08T614 (type test no.)

Model Numbers

Head type	Actuator	Cable lead-in	Contact material	External standards: TIIS・NK	NEPSI	KOSHA	ATEX
Center-neutral type	Standard roller lever	G3/4	Silver alloy	VCX-7001-J	VCX-7001-P	VCX-7001-S	VCX-7001
			Gold-plated	VCX-7001-JK	VCX-7001-PK	VCX-7001-SK	VCX-7001-K
		Increased-safety packing	Silver alloy	VCX-7001-R			
			Gold-plated	VCX-7001-RK			
		M25	Silver alloy		VCX-7001-Q	VCX-7001-V	VCX-7001-C
			Gold-plated		VCX-7001-QK	VCX-7001-VK	VCX-7001-CK
	No lever	G3/4	Silver alloy	VCX-7002-J	VCX-7002-P	VCX-7002-S	VCX-7002
			Gold-plated	VCX-7002-JK	VCX-7002-PK	VCX-7002-SK	VCX-7002-K
		Increased-safety packing	Silver alloy	VCX-7002-R			
			Gold-plated	VCX-7002-RK			
		M25	Silver alloy		VCX-7002-Q	VCX-7002-V	VCX-7002-C
			Gold-plated		VCX-7002-QK	VCX-7002-VK	VCX-7002-CK
	Adjustable roller lever	G3/4	Silver alloy	VCX-7003-J	VCX-7003-P	VCX-7003-S	VCX-7003
			Gold-plated	VCX-7003-JK	VCX-7003-PK	VCX-7003-SK	VCX-7003-K
		Increased-safety packing	Silver alloy	VCX-7003-R			
			Gold-plated	VCX-7003-RK			
		M25	Silver alloy		VCX-7003-Q	VCX-7003-V	VCX-7003-C
			Gold-plated		VCX-7003-QK	VCX-7003-VK	VCX-7003-CK
Simultaneous operation type	Standard roller lever	G3/4	Silver alloy	VCX-7101-J	VCX-7101-P	VCX-7101-S	VCX-7101
			Gold-plated	VCX-7101-JK	VCX-7101-PK	VCX-7101-SK	VCX-7101-K
		Increased-safety packing	Silver alloy	VCX-7101-R			
			Gold-plated	VCX-7101-RK			
		M25	Silver alloy		VCX-7101-Q	VCX-7101-V	VCX-7101-C
			Gold-plated		VCX-7101-QK	VCX-7101-VK	VCX-7101-CK
	No lever	G3/4	Silver alloy	VCX-7102-J	VCX-7102-P	VCX-7102-S	VCX-7102
			Gold-plated	VCX-7102-JK	VCX-7102-PK	VCX-7102-SK	VCX-7102-K
		Increased-safety packing	Silver alloy	VCX-7102-R			
			Gold-plated	VCX-7102-RK			
		M25	Silver alloy		VCX-7102-Q	VCX-7102-V	VCX-7102-C
			Gold-plated		VCX-7102-QK	VCX-7102-VK	VCX-7102-CK
	Adjustable roller lever	G3/4	Silver alloy	VCX-7103-J	VCX-7103-P	VCX-7103-S	VCX-7103
			Gold-plated	VCX-7103-JK	VCX-7103-PK	VCX-7103-SK	VCX-7103-K
		Increased-safety packing	Silver alloy	VCX-7103-R			
			Gold-plated	VCX-7103-RK			
		M25	Silver alloy		VCX-7103-Q	VCX-7103-V	VCX-7103-C
			Gold-plated		VCX-7103-QK	VCX-7103-VK	VCX-7103-CK

Notes:
- Please contact one of our sales representatives for information on model numbers with IECEx certification.

VCX-7000 Series Specifications

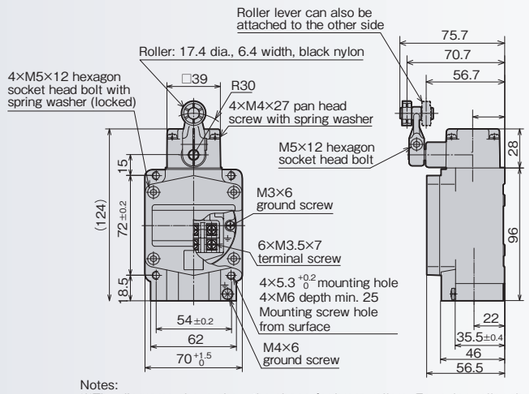
Item			Specifications
Structure	Contact form		Single-pole double-throw (SPDT)×2
	Terminal type		M3.5 pan head screw with square washer
	Contact material		Silver: rivet. Gold alloy: cross-point
	Explosion-proof structure		Internal switch: d (explosion-proof), housing: e (increased-safety explosion-proof)
	Protective structure		IP67 (IEC 60529, JIS C 0920)
Electrical performance	Electrical rating		Silver: 5A at 250 Vac, 0.4A at 125 Vdc, 0.2 A at 250 Vdc Gold alloy: 0.1 A at 125 Vac, 0.1 A at 30 Vdc
	Dielectric strength		Between continuous terminals: 600 Vac, 50/60 Hz for 1 minute Between non-continuous terminals: 2,000 Vac, 50/60 Hz for 1 minute Between each terminal and non-live metal part: 2000 Vac, 50/60 Hz for 1 minute Between each terminal and ground: 2000 Vac, 50/60 Hz for 1 minute
	Insulation resistance		Min. 100 MΩ (by 500 Vdc megger)
	Initial contact resistance		Silver: max. 50 MΩ (6–8 Vdc, thermal current 1 A, measured by voltage drop method) Gold alloy: max. 100 MΩ (6–8 Vdc, thermal current 0.1 A, measured by voltage drop method)
	Recommended min. contact operating voltage/ current		Silver: 10 mA at 24 V, 20 mA at 12 V Gold alloy: 10 mA at 5V
Mechanical performance	Actuator strength		Withstands loads 5 times O.F. (operating direction for 1 minute)
	Terminal strength		Withstands tightening torque of 0.6N·m for 1 minute
	Impact resistance		200 m/s², contacts open for 1 ms max. in free position
	Vibration resistance		1.5 mm peak-to-peak amplitude, frequency 10 to 55 Hz, 2 h continuously, contacts open for 1 ms max. in free position and total travel position
	Allowable operating speed		0.3 mm/s to 0.5 m/s At min. speed, unstable state of contacts lasts for 0.1 s max. At max. speed actuator is not damaged.
	Operating frequency		Max. 120 operations/minute
Life	Mechanical		Min. 2 million operations (with overtravel at 70 to 100% of rated value)
	Electrical		Silver: min. 30,000 operations, 5 A at 250 Vac, 0.4 A at 125 Vdc, 0.2 A at 250 Vdc (Min. 100,000 operations, 3 A at 250 Vac, 0.4 A at 30 Vdc, 0.2 A at 125 Vdc, 0.1 A at 250 Vdc) Gold alloy: min. 2 million operations, 0.1 A at 125 Vac, 0.1 A at 30 Vdc
Environment	Operating temperature		−10 to +60℃ (no freezing allowed)
	Operating humidity		45–85%RH
	Storage temperature		−10 to +60℃
	Storage humidity		Max. 98% RH (with conduit section plug inserted)
	Group and temperature class		IIC T6
	Hazardous area classification		Zone 1 and Zone 2 hazardous areas
Recommended tightening torque	Body		5–6 N·m (M5 hexagon socket head bolt)
	Cover		5–6 N·m (M5 hexagon socket head bolt with spring washer)
	Head		1.3–1.7 N·m (M4 pan head screw head with spring washer)
	Terminals		0.8–1.2 N·m (M3.5 pan head screw with square washer)
	Lever		4–5.2 N·m (M5 hexagon socket head bolt)
	Internal ground		0.4–0.6 N·m (M3 binding head machine screw with toothed washer)
	External ground		1.3–1.7 N·m (M4 binding head machine screw with spring washer)
Applicable cable size	Terminals	Stranded cable	Nominal cross-sectional area 0.5mm² to 1.5mm² (AWG20 to AWG16)
		Single cable	Nominal cross-sectional area 0.5mm² to 1.5mm² (AWG20 to AWG16)
	Internal ground		Uses M3 crimp-type terminal with insulating coating
	External ground		Uses M4 crimp-type terminal Cables with a nominal cross-sectional area of up to 4mm² can be connected

External Dimensions

（unit：mm）

■ Standard roller lever type

VCX-7□0[1]-□□

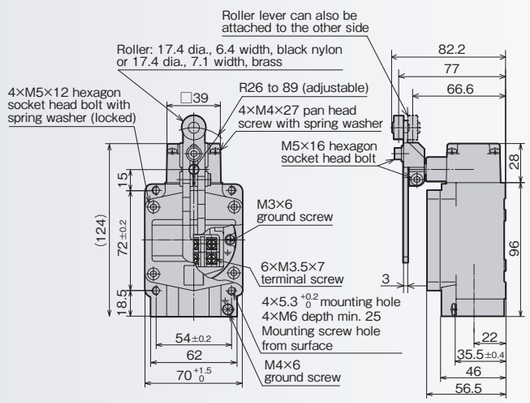


Operational characteristics \ Model no.	VCX-700□-□□
OF (operating force)	15.7N max
RF (reset force)	2.2N min
RT (reset travel)	10° max
MD (movement differential)	3° max
OT (overtravel)	35° min
2-switch simultaneous operation	—

Notes:
※The diagrams above show the shape for brass rollers. For nylon roller shape, see the VCX-7□03-□□ diagrams below.

■ Adjustable roller lever type

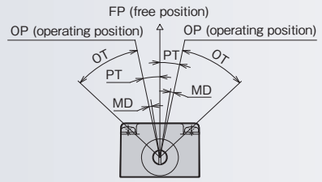
VCX-7□0[3]-□□



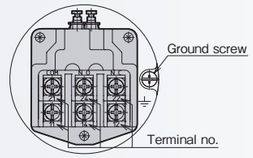
Operational characteristics \ Model no.	VCX-710□-□□
OF (operating force)	15.7N max*
RF (reset force)	2.2N min*
RT (reset travel)	12° max
MD (movement differential)	3° max
OT (overtravel)	35° min
2-switch simultaneous operation	3° max

*When lever length is 38.1 mm

Notes:
※The diagrams above show the shape for nylon rollers. For brass roller shape, see the VCX-7□01-□□ diagrams below.
※Tolerance for dimensions is ± 0.8 unless otherwise stated.

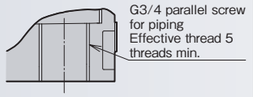
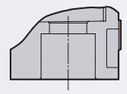


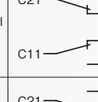
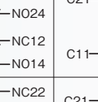
Detailed terminal diagram



Terminal connections

Switch 1		Switch 2	
Terminal no.	Type	Terminal no.	Type
11	COM	21	COM
12	N.C.	22	N.C.
14	N.O.	24	N.O.

Conduit section details	
VCX-7□□□-J□□ (Increased-safety conduit type)	VCX-7□□□-R□□ (Increased-safety packing type)
	

Code	Operation type	Circuit diagram		
		Counterclockwise direction operation	Free position	Clockwise direction operation
0	Center-neutral			
1	Simultaneous operation