

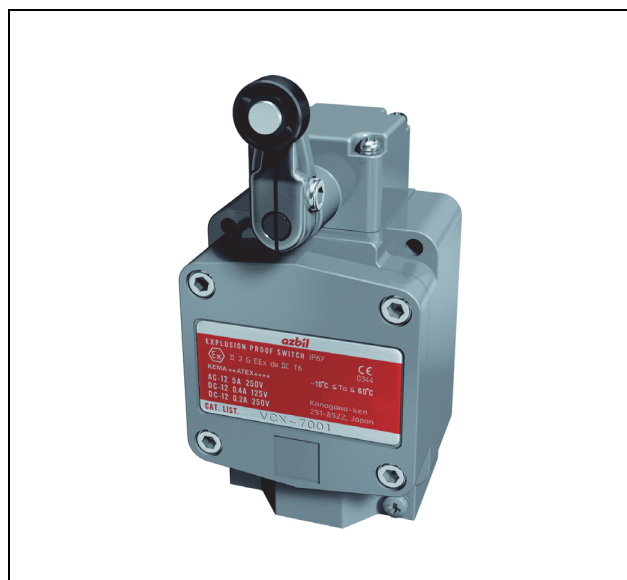
# 2-Point Detection Explosion-proof Switches Compliant with IEC Standards

## Model VCX7000

### OVERVIEW

- 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.
- 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.
- A corrosion-resistant explosion-proof packing connector is also available for use in combination with the increased-safety packing corrosion-resistant type.

*Note) This specification sheet is prepared for the application of Azbil Corporation's control valve accessory usage.*



External standards	Explosion-proof structure
TIIS (Japan)	Ex de IIC T6
NEPSI (China)	Ex de IIC T6
KOSHA (South Korea)	Ex de IIC T6 IP67
ATEX (Europe)	II 2G Ex de IIC T6
IEC Ex (Europe)	Ex de IIC T6
CNS (Taiwan)	Ex de IIC T6

### MODEL SELECTION

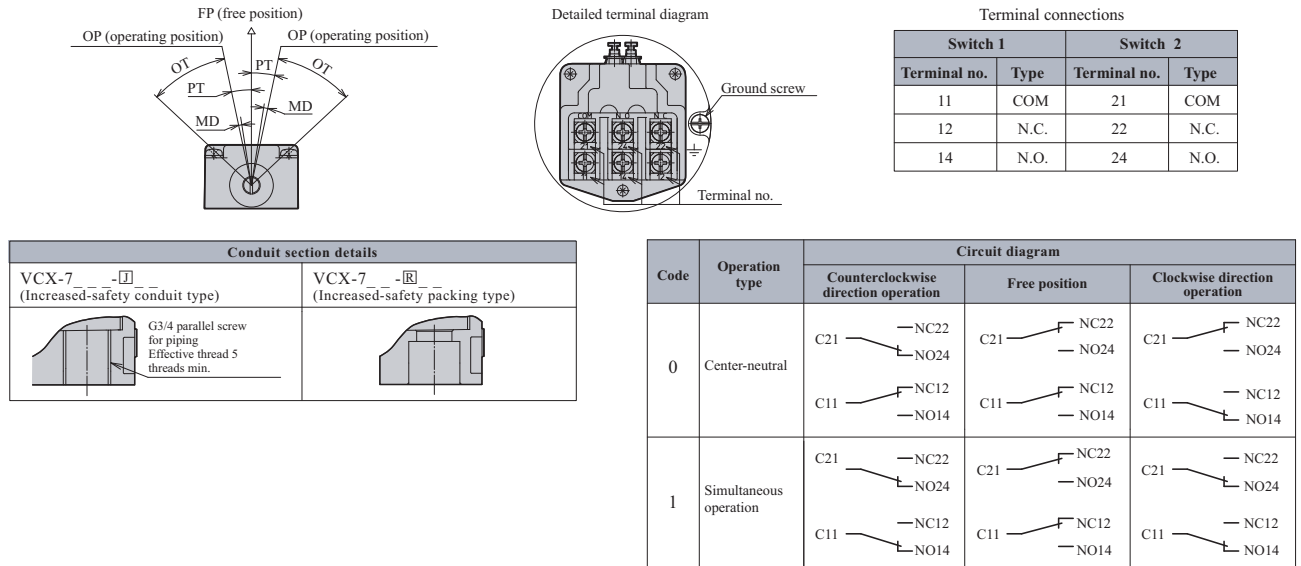
#### • Switch

Head type	Actuator	Cable lead-in	Contact material	External standards					
				TIIS	NEPSI	KOSHA	ATEX	IEC Ex	CNS
Center neutral	Std. roller lever	G3/4	Silver-alloy	VCX-7001-J	VCX-7001-P	VCX-7001-S	VCX-7001	VCX-7001-E	VCX-7001-ET
			Gold-plated	VCX-7001-JK					
		Increased-safety packing	Silver-alloy	VCX-7001-R	VCX-7001-Q	VCX-7001-S	VCX-7001-C	VCX-7001-F	VCX-7001-FT
			Gold-plated	VCX-7001-RK					
		M25	Silver-alloy						
Simultaneous operation	Std. roller lever	G3/4	Silver-alloy	VCX-7101-J	VCX-7101-P	VCX-7101-S	VCX-7101	VCX-7101-E	VCX-7101-ET
			Gold-plated	VCX-7101-JK					
		Increased-safety packing	Silver-alloy	VCX-7101-R					
			Gold-plated	VCX-7101-RK					
		M25	Silver-alloy						

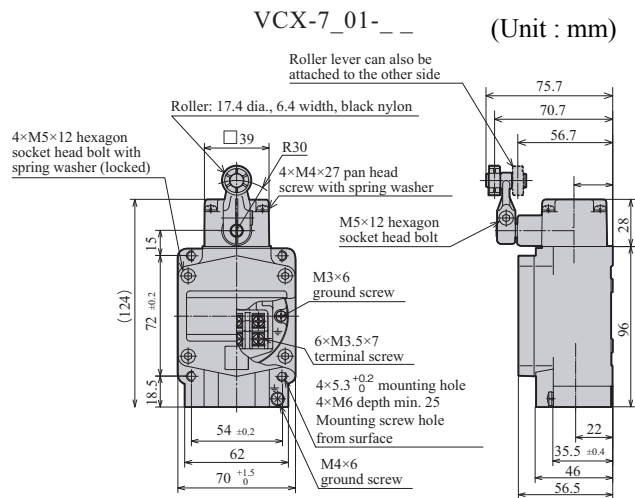
*Note) For G3/4 cable lead-in with TIIS certification (-J), use it in combination with a nipple and ceiling fitting. Anti-corrosion models are available. For details, contact the local Azbil branch office or sales office. Coding of catalog listing: VCX-7\_0\_ \_ \_M. ("M" means anti-corrosion type.)*

**PERFORMANCE**

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/s <sup>2</sup> , 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 °C (no freezing allowed)	
	Operating humidity	45–85%RH	
	Storage temperature	-10 to +60 °C	
	Storage humidity	Max. 98% RH (with conduit section plug inserted)	
	Group and temperature class	II C 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 0.5mm <sup>2</sup> to 1.5 mm <sup>2</sup> (AWG20 to AWG16)
		Single cable	Nominal cross-sectional area 0.5 mm <sup>2</sup> to 1.5 mm <sup>2</sup> (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 4 mm <sup>2</sup> can be connected



## DIMENSIONS



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

Figure 1 External dimension

## Explosion-Proof Packing Connectors (Standard)

(Unit : mm)

Model number	Electrical connection	Applicable cable diameter
2PA-JEX108PM	G 1/2	$\phi$ 7.5 to 8.5
2PA-JEX109PM		$\phi$ 8.5 to 9.5
2PA-JEX110PM		$\phi$ 9.5 to 10.5
2PA-JEX111PM		$\phi$ 10.5 to 11.5
2PA-JEX112PM		$\phi$ 11.5 to 12.5
2PA-JEX113PM		$\phi$ 12.5 to 13.5
2PA-JEX208PM	G 3/4	$\phi$ 7.5 to 8.5
2PA-JEX209PM		$\phi$ 8.5 to 9.5
2PA-JEX210PM		$\phi$ 9.5 to 10.5
2PA-JEX211PM		$\phi$ 10.5 to 11.5
2PA-JEX212PM		$\phi$ 11.5 to 12.5
2PA-JEX213PM		$\phi$ 12.5 to 13.5

## Explosion-Proof Packing Connectors (for CNS)

(Unit : mm)

Model number	Electrical connection	Applicable cable diameter
EXPC-16B-1	G 1/2	$\phi$ 10.0 to 12.0
EXPC-16B-2		$\phi$ 8.0 to 10.0
EXPC-16B-3		$\phi$ 6.0 to 8.0
EXPC-22B-1	G 3/4	$\phi$ 14.0 to 16.0
EXPC-22B-2		$\phi$ 12.0 to 14.0

Please, read 'Terms and Conditions' from following URL before the order and use.

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

Specifications are subject to change without notice.

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