

2-Point Detection Explosion-Proof Switches

VCX Series

Vertical, 2-point detection explosion-proof limit switches for outdoor use.



- Case and covers are made of die-cast aluminum alloy to ensure a light and robust structure
- Die-cast surfaces have been treated against rust and are bake-finished for outstanding corrosion resistance and weatherproofing
- Switches are available in two convenient cable lead-in types, conduit and pressure-resistant packing connector
- External screws are stainless steel for outstanding corrosion resistance
- The center-neutral switch has two different internal switches that move in accordance with the direction of actuator rotation.
This enables a single limit switch to detect upper and lower valve limits

Certifying	Explosion-proof structure	Approval No.
The Technology Institution of Industrial Safety	d2G4	Center-neutral type:T58037 Simultaneous operation type:T58038
Nippon Kaiji Kyokai	d2G4	82T605

ORDER GUIDE

Switches

Operation	Catalog listing	Actuator shape	O.F. (N max.) (operating force)	P.T. (° max.) (pretravel)	M.D. (° max.) (movement differential)
Center-neutral	VCX-5001		15.7	10	3
	VCX-5001-R				
	VCX-5003		15.7	10	3
	VCX-5003-R				
Simultaneous operation type	VCX-5101		15.7	12	3
	VCX-5101-R				
	VCX-5103		15.7	12	3
	VCX-5103-R				

Pressure-Resistant Packing Connector (used in combination with VCX5□0□-R)

Shape	Catalog listing	Protective pipe size	Applicable cable diameter	Catalog listing	Protective pipe size	Applicable cable diameter
	2PA-JEX108	G 1/2	7.5 to 8.5mm dia.	2PA-JEX208	G 3/4	7.5 to 8.5mm dia.
	2PA-JEX109		8.5 to 9.5mm dia.	2PA-JEX209		8.5 to 9.5mm dia.
	2PA-JEX110		9.5 to 10.5mm dia.	2PA-JEX210		9.5 to 10.5mm dia.
	2PA-JEX111		10.5 to 11.5mm dia.	2PA-JEX211		10.5 to 11.5mm dia.
	2PA-JEX112		11.5 to 12.5mm dia.	2PA-JEX212		11.5 to 12.5mm dia.
	2PA-JEX113		12.5 to 13.5mm dia	2PA-JEX213		12.5 to 13.5mm dia



● Auxiliary Actuators

Type	Shape	Catalog listing	Roller material	Lever tightening method
Roller lever		6PA-J63	Black nylon	Hexagon socket head bolt
		6PA-J105		
Adjustable roller lever		6PA-J79	Black nylon roller	Hexagon socket head bolt
		6PA-J119	Brass roller	


Note: When combining actuators, use combinations made of non-ignitable materials.

PERFORMANCE

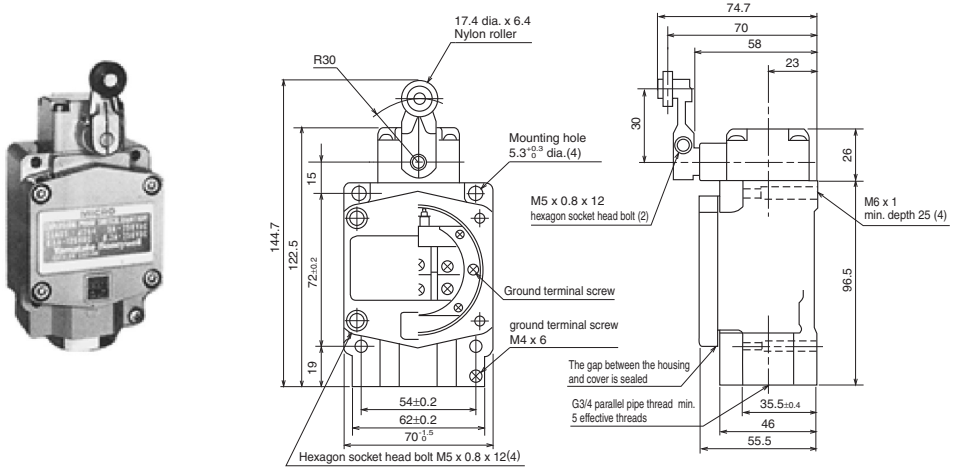
	Catalog listing	Details
Standards	Compliance	JIS C 4508 / Factory Electrical Facilities Explosion-proofing Guidelines(1979)
Structure	Contact type	Single-Pole Double-Throw (SPDT) x 2
	Contact shape	Pure silver rivet
	Terminal shape	Screw (M4 binding head machine screw with toothed washer)
	Protective structure	IP67(IEC 60529, JIS C 0920)
	Pressure-resistant explosion-proof structure	d2G4
Electrical performance	Electrical rating	See Table 1.
	Dielectric strength	Between non-continuous terminals : 600V, 50/60Hz for 1 minute Between each terminal and non-live metal part : 2,000V, 50/60Hz for 1 minute Between each terminal and ground : 2,000V, 50/60Hz for 1 minute
	Insulation resistance	Min. 100MΩ(by 500Vdc megger)
	Initial contact resistance	Max. 50mΩ(6 to 8Vdc, thermal current 1A, measured by voltage drop method)
	Recommended min. contact operating voltage/current	24Vac/dc-10mA, 12Vac/dc-20mA
Mechanical performance	Actuator strength	Withstands load 5 times O.F. (operating direction for 1 minute)
	Terminal strength	Withstands tightening torque of 0.6N-m for 1 minute
	Impact resistance*	200m/s ² Contact release of 1ms max. in free position and operating limit position
	Vibration resistance* (2 continuous hours)	1.5mm peak-to-peak amplitude, frequency 10 to 55Hz Contact release of 1ms max. in free position and operating limit position
	Allowable operating speed*	0.32mm/s to 0.5m/s Min. speed: Unstable state of contacts 0.1s max. Max. speed: Actuator damage not allowed
	Mechanical operating frequency	Max. 120 operations/minute
Life	Mechanical life	Min. 2 million operations.
	Electrical life	Min. 100,000 operations, 250Vac-3A resistive load Environmental conditions
Operating temperature	Operating temperature	-10 to +60°C(no freezing allowed)
	Environment class	Explosion-proof switch structure for outdoor use satisfies d2G4
Recommended tightening torque	Body	5 to 6N-m (M5 hexagon socket head bolt)
	Cover	5 to 6N-m (M5 hexagon socket head bolt)
	Actuator	4 to 5.2N-m (M5 hexagon socket head bolt)
	Terminal	0.4 to 0.6N-m(M3)

Note: Items marked by * are values for the VCX-5001. Values for unmarked items are common to all VCX Series models.

● Table 1. Electrical rating and circuit configuration

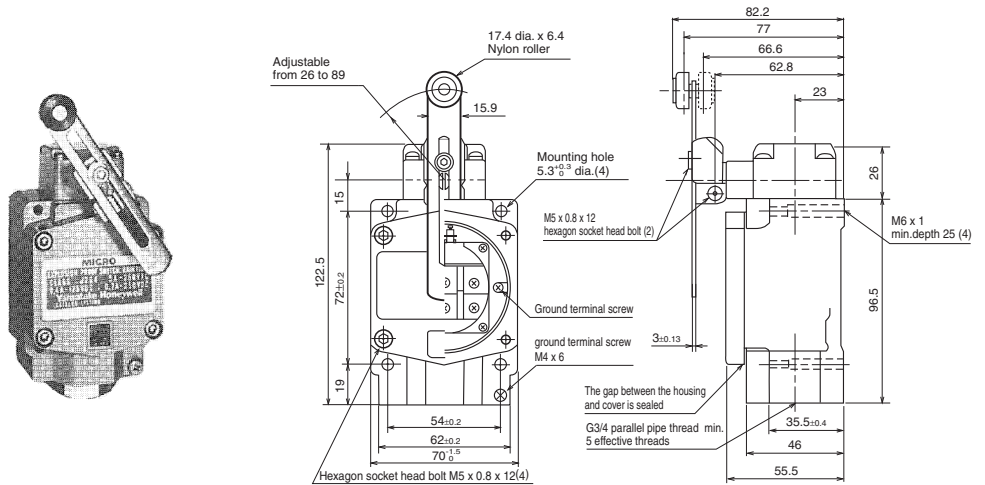
Item	Rating
Circuit configuration	
Electrical rating	250Vac-5A 125Vdc-0.4A 250Vdc-0.2A

Roller lever type



Operation		Centerneutral	Simultaneous operation
Catalog listing	Conduit	VCX-5001	VCX-5101
	Pressure-resistant packing	VCX-5001-R	VCX-5101-R
O.F.	(N max.)	15.7	
R.F.	(N min.)	2.2	
P.T.	(° max.)	10	12
M.D.	(° max.)	3	
O.T.	(° min.)	35	

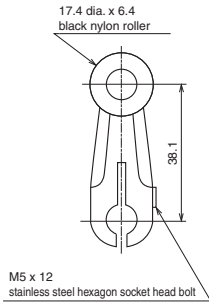
Adjustable roller lever type



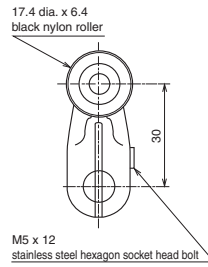
Operation		Centerneutral	Simultaneous operation
Catalog listing	Conduit	VCX-5003	VCX-5103
	Pressure-resistant packing	VCX-5003-R	VCX-5103-R
O.F.	(N max.)	15.7	
R.F.	(N min.)	2.2	
P.T.	(° max.)	10	12
M.D.	(° max.)	3	
O.T.	(° min.)	35	

Note: Values are for lever length of 38.1mm.

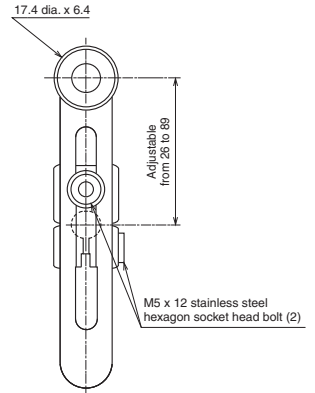
6PA-J63



6PA-J105



6PA-J79 (black nylon roller)
6PA-J119 (brass roller)



Note: About conduit sections in dimension drawings

On conduit pipe joined type switches, a G3/4 screw is threaded into the conduit section, and a blind stopper is assembled to ensure sealability up till wiring. On pressure-resistant packing lead-in type switches, a screw for pipes is not threaded as an exclusive connector (sold separately) is assembled for use. Remove the blind stopper before assembling the exclusive connector.

■ PRESSURE-RESISTANT PACKING CONNECTOR

The pressure-resistant packing connector is an exclusive connector that is used in combination with the pressure-resistant lead-in system of the explosion-proof switch.

Exploded view of pressure-resistant packing connector

Shape	Catalog listing	Protecting pipe dimensions	Applicable cable diameter
	2PA-JEX108	G 1/2	7.5 to 8.5mm dia.
	2PA-JEX109		8.5 to 9.5mm dia.
	2PA-JEX110		9.5 to 10.5mm dia.
	2PA-JEX111		10.5 to 11.5mm dia.
	2PA-JEX112		11.5 to 12.5mm dia.
	2PA-JEX113		12.5 to 13.5mm dia.
	2PA-JEX208	G 3/4	7.5 to 8.5mm dia.
	2PA-JEX209		8.5 to 9.5mm dia.
	2PA-JEX210		9.5 to 10.5mm dia.
	2PA-JEX211		10.5 to 11.5mm dia.
	2PA-JEX212		11.5 to 12.5mm dia.
	2PA-JEX213		12.5 to 13.5mm dia.

