CSM_TZ_DS_E_2_2

Stable Operation at an Ambient Temperature of 400°C

- Incorporates a ceramic insulator, cobalt-alloy spring, and specialalloy contact, thus ensuring high contact reliability at high ambient temperature.
- Smoothly operates at an ambient temperature of 400°C.

Be sure to read Safety Precautions on page 3 and Safety Precautions for



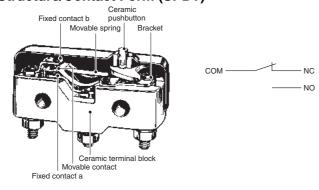
Ordering Information

Actuator	Model
Pin plunger	TZ-1G
Hinge lever	TZ-1GV
Short hinge roller lever	TZ-1GV22
Hinge roller lever	TZ-1GV2

Note: The levers and rollers are made of stainless steel.

Structure

Structure/Contact Form (SPDT)



Specifications

Ratings

Detect	Non	-induct	ive load	(A)	Inductive load (A)				
Rated voltage (V)	Resis loa		Lamp load		Lamp load Inductive load			Motor load	
(•)	NC	NO	NC	NO	NC	NO	NC	NO	
125 VAC 250 VAC	1 1		0.9 0.45	0.45 0.3	1 1		1.5 0.45	0.75 0.3	
8 VDC 14 VDC 30 VDC 125 VDC	1 1 1 0.	.4	0.9 0.9 0.9 0.05	0.45 0.45 0.45 0.05	1 1 1 0	.4	1.5 1.5 1.5 0.05	1.5 1.5 1.5 0.05	

- Note: 1. The above current ratings are the values of the steady-state current.
 - 2. Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
 - 3. Lamp load has an inrush current of 10 times the steady-state current.
 - 4. Motor load has an inrush current of 6 times the steady-state current.
 - 5. The above ratings are tested under the following conditions. Ambient temperature: 20±2°C Ambient humidity: 65±5%RH Switching frequency: 20 times/min

Characteristics

Operating s	peed	0.05 mm to 1 m/s *1		
Operating	Mechanical	60 operations/min		
frequency	Electrical	20 operations/min		
Insulation resistance		100 MΩ min. (at 500 VDC)		
Contact resistance		100 mΩ max. (initial value)		
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between terminals of same polarity 1,500 VAC, 50/60 Hz for 1 min between current-carrying metal parts and ground and between each terminal and non-current-carrying metal parts		
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *2		
Shock	Destruction	500 m/s ² max.		
resistance	Malfunction	300 m/s ² max. *1 *2		
Durability	Mechanical	100,000 operations min.		
Durability	Electrical	50,000 operations min.		
Degree of protection		IP00		
Electric shock protection		Class I		
Ambient operating temperature		-65°C to 400°C (with no icing)		
Ambient operating humidity		35% to 85%RH		
Weight		Approx. 45 to 54 g		

- *1. This operating speed applies to switches with pin-type pushbuttons. *2. This refers to a malfunction period of 1 ms max.

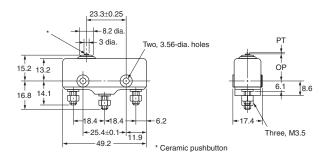
Contact Specifications

	Specification	Rivet
Comtont		
Contact Material	Platinum alloy	
	Gap (standard value)	0.5 mm
Inrush cur-	NC	9 A max.
rent	NO	4.5 A max.

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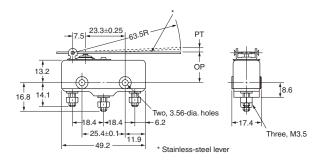
(Unit: mm)

Pin Plunger TZ-1G



Operating force	OF max.	4.9 N
Release force	RF min.	1.12 N
Pretravel	PT max.	0.4 mm
Over travel	OT min.	0.13 mm
Movement Differentia	0.15 mm	
Operating Position OP		15.9±0.6 mm

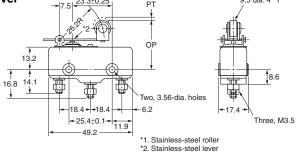
Hinge Lever TZ-1GV



OF max.	0.98 N
RF min.	0.14 N
PT max.	3.5 mm
OT min.	4.6 mm
MD max.	1.3 mm
OP	18±1.2 mm

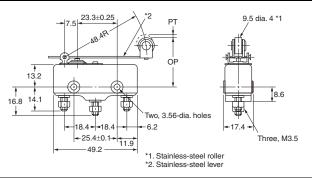
Short Hinge Roller Lever





OF max.	2.35 N
RF min.	0.34 N
PT max.	1.5 mm
OT min.	1.9 mm
MD max.	0.6 mm
OP	28.6±1.2 mm

Hinge Roller Lever TZ-1GV2



OF max.	1.27 N
RF min.	0.2 N
PT max.	2.6 mm
OT min.	3.5 mm
MD max.	1 mm
OP	28.6±1.2 mm

Note: Each dimension has a tolerance of ± 0.4 mm unless otherwise specified.

Safety Precautions

Refer to Safety Precautions for All Basic Switches.

Precautions for Safe Use

Handling

The Switch has a ceramic casing. Do not drop the Switch from a height of 30 cm or more. Doing so will break the casing.

Mounting

- Be sure to turn OFF the power supply to the Switch before mounting, dismounting, wiring, or working on the Switch for maintenance.
- Mount the switch with M3.5 stainless-steel screws with plane washer and spring washers securely.

Use M3.5 stainless-steel mounting screws with plane washers or spring washers to securely mount the Switch. Tighten the screws to a torque of 0.69 to 0.98 N·m.

Mounting Holes



- Connect nickel-plated solderless terminals to the TZ. Each terminal must be secured on the TZ with M3.5 nut.
- Make sure that the ceramic case is free of metal powder or other impurities.

Operation

- Do not modify the Actuator and change the operating position.
- Make sure that the switching speed is not extremely slow or do not use the Switch so that the pushbutton will be set to a position between the FP and OP.
- Make sure that the pin-type pushbutton and the switching stroke are on the same vertical line.
- Make sure that the switching frequency or speed is within the specified range.
- If the switching speed is extremely slow, the contact may not be switched smoothly, which may result in a contact failure or contact welding.
- If the switching speed is extremely fast, switching shock may damage the Switch soon. If the switching frequency is too high, the contact may not catch up with the speed.

The rated permissible switching speed and frequency indicate the switching reliability of the Switch.

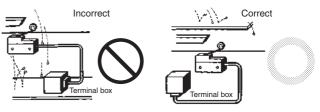
The life of a Switch is determined at the specified switching speed. The life varies with the switching speed and frequency even when they are within the permissible ranges. In order to determine the life of a Switch model to be applied to a particular use, it is best to conduct an appropriate durability test on some samples of the model under actual conditions.

 Make sure that the actuator travel does not exceed the permissible OT position. The operating stroke must be set to 70% to 100% of the rated OT.

Precautions for Correct Use

Mounting Location

 Do not use the switch alone in atmospheres such as flammable or explosive gases. Arcing and heat generation associated with switching may cause fires or explosions. Switches are generally not constructed with resistance against water. Use a protective cover to prevent direct spraying if the switch is used in locations subject to splashing or spurting oil or water, dust adhering.

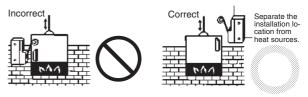


 Install the switch in a location that is not directly subject to debris and dust from cutting. The actuator and the switch body must be protected from accumulated cutting debris and dirt.



- Do not use the switch in locations subject to hot water (greater than 60°C) or in water vapor.
- Do not use the switch outside the specified temperature and atmospheric conditions.

The permissible ambient temperature depends on the model. (Refer to the specifications in this catalog.) Sudden thermal changes may cause thermal shock to distort the switch and result in faults.



 Mount a cover if the switch is to be installed in a location where worker inattention could result in incorrect operation or accidents.



- Subjecting the switch to continuous vibration or shock may result in contact failure or faulty operation due to abrasion powder and in reduced durability. Excessive vibration or shock will cause the contacts to operate malfunction or become damaged. Mount the switch in a location that is not subject to vibration or shock and in a direction that does not subject the switch to resonance.
- If silver contacts are used with relatively low frequency for a long time or are used with microloads, the sulfide coating produced on the contact surface will not be broken down and contact faults will result. Use a microload switch that uses gold contacts.
- Do not use the switch in atmospheres with high humidity or heat or in harmful gases, such as sulfide gas (H₂S, SO₂), ammonia gas (NH₃), nitric acid gas (HNO₃), or chlorine gas (Cl₂). Doing so may impair functionality, such as with damage due to contacting faults or corrosion.
- The switch includes contacts. If the switch is used in an atmosphere with silicon gas, arc energy may cause silicon oxide (SiO2) to accumulate on the contacts and result in contact failure. If there is silicon oil, silicon filling, silicon wiring, or other silicon products in the vicinity of the switch, use a contact protection circuit to limit arcing and remove the source of the silicon gas.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments

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At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

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Disclaimers

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Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

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In the interest of product improvement, specifications are subject to change without notice.

