

SERIES Z/T336

Heavy-Duty Safety-Rated, Positive-Break Limit Switches



Features & Benefits

- **“Positive-Break” NC contacts** ... won't stick or weld shut.
- **Watertight design** ... meets IP67 washdown requirements.
- **Rugged, corrosion-resistant housing** ... tolerates hostile environments.
- **Six popular actuator styles** ... for application versatility.
- **Four 90° actuator mounting positions** ... provide installation flexibility.
- **Slow or snap-action operation** ... choose to best satisfy application requirements.
- **Safety-system approved** ... models with positive-break contacts approved for use in machine guarding applications.
- **Meets rigid safety agency standards** ... IEC, BG, VDE, UL and CSA.

Description

The Z/T336 Series limit switches are designed for use with movable machine guards/access gates which must be closed for operator safety ... and for any other presence/position sensing application normally addressed with conventional limit switches. Their positive-opening NC contacts provide a higher level of safety and/or reliability than conventional spring-driven switches whose contacts can weld or stick shut.

Each is available with a choice of six standard actuators ... rounded plunger, roller plunger, roller rocking lever, rod rocking lever, adjustable roller rocking lever and one-way roller lever ... mountable in any one of four 90° positions. All rocking levers are positively-locked to the shaft, and are adjustable throughout 360° in 10° increments.

Units are available with a choice of slow-action or snap-action contacts.

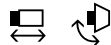
Their rugged fiberglass-reinforced thermoplastic housing and IP67 rating make them ideal alternatives to conventional limit switches.

ORDERING GUIDE

FOR FEATURE:	SPECIFY:
1. Contact operation: Slow Action Snap Action	T Z
2. Operating head	4V
3. Roller lever	H
4. Body size	336-
5. No. of NO contacts	1
6. No. of NC contacts	1
7. Degree of protection IP 67	z
8. Sealing of operating head (optional)	z*
Example 1:	T4VH 336-11z
Example 2:	Z4VH 336-11z

*Available on rocking lever actuator style only.

Typical Applications



The Z/T336 Series may be used in any presence/position sensing application normally addressed with conventional limit switches. Models with positive-break NC contacts are approved for use in safety systems. For safety applications the switch must be mounted such that the actuating element of the machine displaces the switch actuator far enough to exceed the positive-break point. (See contact function diagrams: symbol *).

Z/T336 TECHNICAL DATA

MECHANICAL SPECIFICATIONS

Housing	Glass fiber reinforced self-extinguishing thermoplastic
Operating Temperature	-22°F to +195°F (-30°C to +90°C)
Mechanical Life	30 million operations
Maximum Operating Rate	5000 operations/hour
Bounce Time	Z336 Series: < 2 ms T336 Series: Function of cam speed
Changeover Time	Z336 Series: < 2 ms for cam speed of 1 mm/minute T336 Series: Function of cam speed
Degree of Protection	IP67
Conformity to Standards	IEC 947-5-1 EN 60947-5-1 DIN VDE 0660 Part 200 BG-GS-ET-15 DIN EN 50041 CSA-C22.2 No. 14 (Suffix -1577) UL508 (Suffix -1594)

ELECTRICAL SPECIFICATIONS

Contacts	Fine silver
Contact Configuration	Double-pole, double-break with electrically-separated contact bridges
Contact Gap	Z336 Series: 2x0.03 inches T336 Series: 2x0.16 inches
Contact Rating	4A/230VAC 2.5A/400VAC
Switching Action	Z336 Series: Snap-action with positive-break NC contacts T336 Series: Slow-action, positive-break NC contacts
Short Circuit Protection	Fuse: 10A (time delay) 16A (no time delay) 6A (time delay) as positive-break position switch
Rated Insulation Voltage	500VAC
Rated Impulse Withstand Voltage	6kV
Type Terminals	Screw terminals, maximum 2.5mm (AWG13) wire

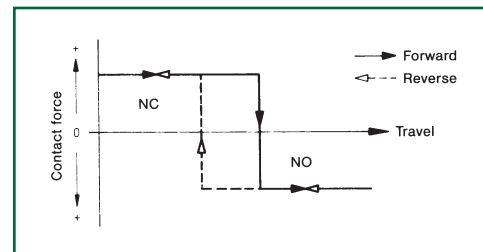


Slow Action Switch
T336 Ⓢ Ⓟ

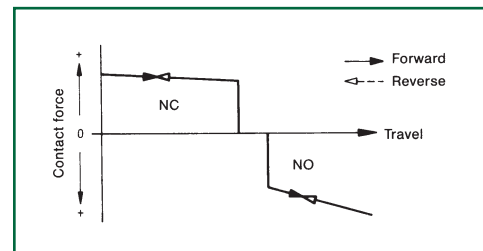


Snap Action Switch
Z336 Ⓢ Ⓟ

SNAP ACTION CONTACT SYSTEMS



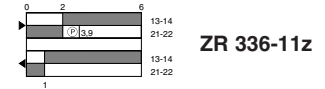
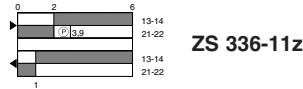
SLOW ACTION CONTACT SYSTEMS



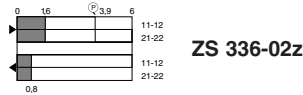
Z/T336 TECHNICAL DATA

Contact function diagrams

Snap action positive break
1 NO + 1 NC



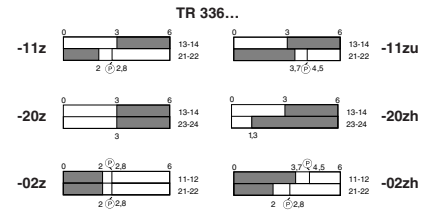
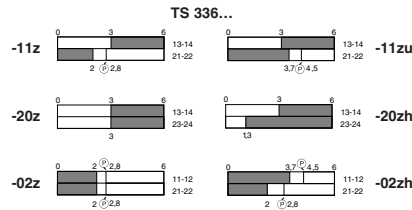
2 NC



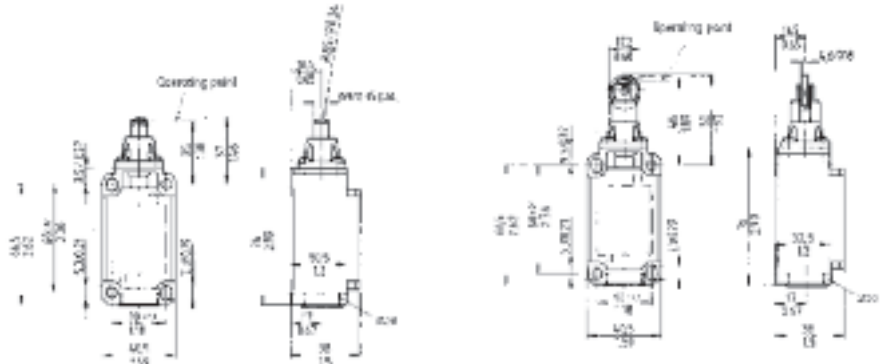
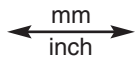
Slow action 1 NO + 1 NC

break before make or make before break
2 NO simultaneous contacts staggered (2-step)

2 NC simultaneous contacts staggered (2-step)
1 NC + 1 NC (CW-CCW)



Dimensions



Types of Actuators

Rounded plunger
Style S

Roller plunger
Style R

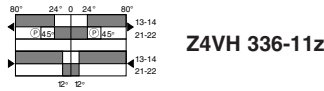
		Actuating Force		Actuating Force			
13-21	14-22	Snap Action positive break	ZS 336-11z	12 N	ZR 336-11z	12 N	
11-21	12-22	Snap Action positive break	ZS 336-02z	12 N	ZR 336-02z	12 N	
Part No.	13-21	14-22	Slow Action Make before break	TS 336-11z	15 N	TR 336-11z	15 N
	13-23	14-24	Slow Action 2-step	TS 336-20z*	17 N	TR 336-20z*	17 N
				TS 336-20zh*		TR 336-20zh*	
	11-21	12-22	Slow Action 2-step	TS 336-02z	14 N	TR 336-02z	14 N
			TS 336-02zh		TR 336-02zh		

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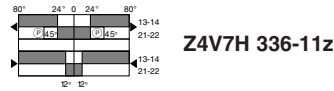
11-21 12-22
1 NC CW + 1 NC CCW

* Not for use in safety applications

Z/T336 TECHNICAL DATA



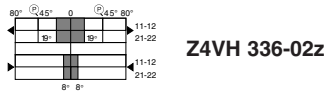
Z4VH 336-11z



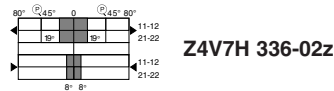
Z4V7H 336-11z



Z4V10H 336-11z



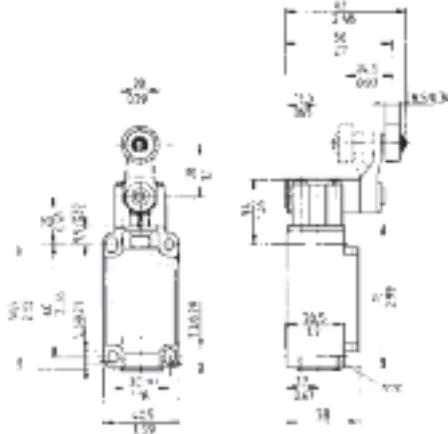
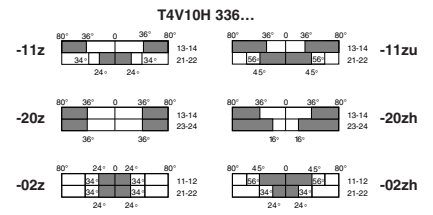
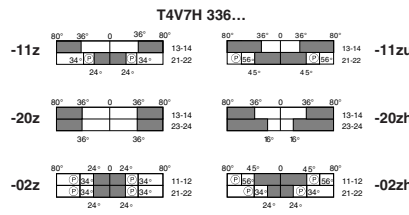
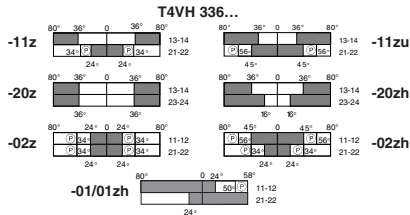
Z4VH 336-02z



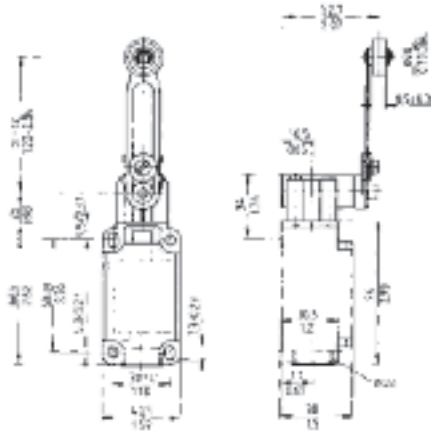
Z4V7H 336-02z



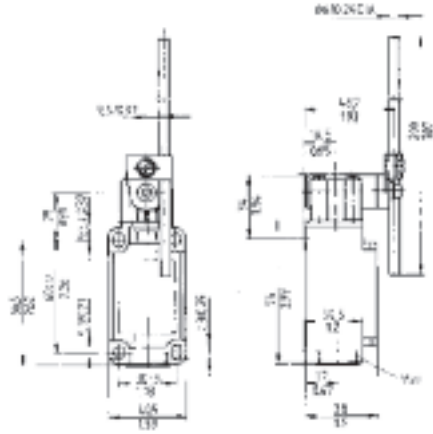
Z4V10H 336-02z



4V operating head with roller rocking lever Style H



4V operating head with adjustable roller rocking lever Style 7H*



4V operating head with rod rocking lever Style 10H*

Actuating Force		Actuating Force		Actuating Force	
Z4VH 336-11z	27 Ncm	Z4V7H 336-11z*	27 Ncm	Z4V10H 336-11z*	27 Ncm
Z4VH 336-02z	27 Ncm	Z4V7H 336-02z*	27 Ncm	Z4V10H 336-02z*	27 Ncm
T4VH 336-11z	27.5 Ncm	T4V7H 336-11z*	27.5 Ncm	T4V10H 336-11z*	27.5 Ncm
T4VH 336-11zu		T4V7H 336-11zu*		T4V10H 336-11zu*	
T4VH 336-20z*	28 Ncm	T4V7H 336-20z*	28 Ncm	T4V10H 336-20z*	28 Ncm
T4VH 336-20zh*		T4V7H 336-20zh*		T4V10H 336-20zh*	
T4VH 336-02z	27.5 Ncm	T4V7H 336-02z*	27.5 Ncm	T4V10H 336-02z*	27.5 Ncm
T4VH 336-02zh		T4V7H 336-02zh*		T4V10H 336-02zh*	

TVH 336-01/01z 26.5 Ncm
(other levers upon request)

* Not for use in safety applications

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Z/T336 TECHNICAL DATA

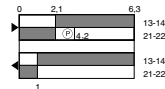
Contact function diagrams

Snap action positive break
1 NO + 1 NC

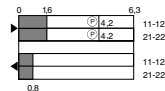
2 NC

Slow action 1 NO + 1 NC

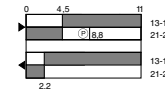
break before make or make before break
2 NO simultaneous contacts staggered (2-step)
2 NC simultaneous contacts staggered (2-step)
1 NC + 1 NC (CW-CCW)



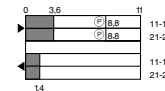
Z1K 336-11z



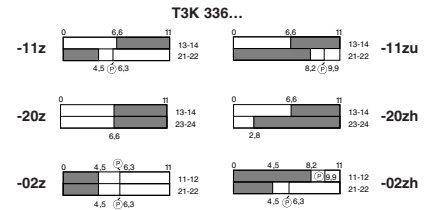
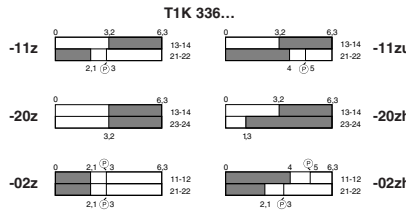
Z1K 336-02z



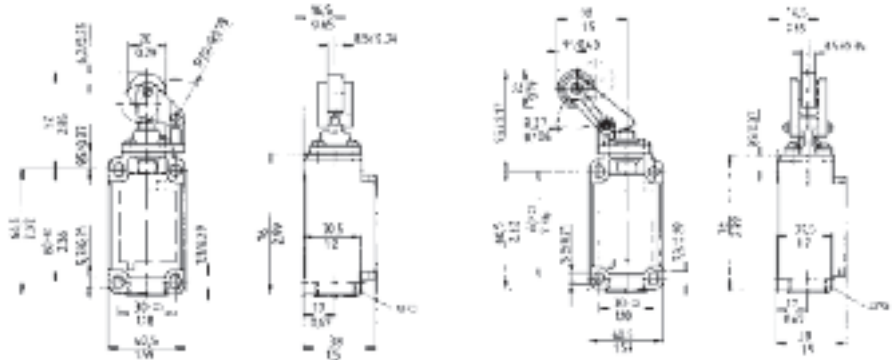
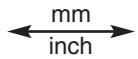
Z3K 336-11z



Z3K 336-02z



Dimensions



Types of Actuators

One-way roller lever
Style 1K

One-way roller lever
Style 3K

Part No.	Contact Function	One-way roller lever Style 1K		One-way roller lever Style 3K	
		Part No.	Actuating Force	Part No.	Actuating Force
13-14 21-22	Snap Action positive break	Z1K 336-11z	12 N	Z3K 336-11z	5.0 N
11-12 21-22	Snap Action positive break	Z1K 336-02z	12 N	Z3K 336-02z	5.0 N
13-14 21-22	Slow Action Make before break	T1K 336-11z	15 N	T3K 336-11z	6.3 N
13-14 23-24	Slow Action 2-step	T1K 336-20z*	17 N	T3K 336-20z*	7.2 N
11-12 21-22	Slow Action 2-step	T1K 336-02z	14 N	T3K 336-02z	6.0 N
		T1K 336-02zh		T3K 336-02zh	

* Not for use in safety applications