

 ECE <small>An ISO 9001 Company</small>	EXCEL CELL ELECTRONIC CO., LTD.	NO.	A31005	PAGE
		SPECIFICATION	Edition	1

EV 16 SERIES MICRO SWITCH

1. FEATURES:

- 1-1 High applicability for general industrial equipment and home appliances.
- 1-2 High precision mechanism design offering durable acute operation and long life.
- 1-3 Heavy/Light operation force specifications.
- 1-4 Three Kinds of terminal available #187 quick connect/solder, #187 quick connect and #250 quick connect type.

2. APPLICATION:

- 2-1 Home appliances
- 2-2 Vending machines
- 2-3 Amusement and communication equipment
- 2-4 Office automation appliances
- 2-5 General industrial machines

2. SPECIFICATIONS:

Ratings: 16A 1/2HP 125/250VAC
0.6A 125VDC; 0.3A 250VDC

Circuit arrangement: SPST(1a), snap action
SPST(1b), snap action
SPDT(1c), snap action

3.1 ELECTRICAL

- 3-1-1 Insulation resistance: 100 M Ω Min. at 500 VDC
- 3-1-2 Dielectric Strength
 - Between non-continuous terminal: AC 1000Vrms
 - Between each terminal and other: AC 2000Vrms
 - Exposed metal parts
 - Between each terminal and ground: AC 2000Vrms
- 3-1-3 Initial contact resistance: 100m Ω Max.

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3-1-4 Overload current: AC 250V(50/60)Hz 20A 0.75~0.8 power
DC 250V 0.45A

3-1-5 Temperature rise: After AC 250V 16A 6000 cycles,
16A current, terminal 30°C Max.

3-1-6 Surge current: N.O. 40 A
(AC50/60Hz 110V) N.C. 40 A

3.2 MECHANICAL

3-2-1 Operating Force (OF): see attached drawing.
Release Force (RF): see attached drawing.
Pre-travel (PT): see attached drawing.
Operating Position (OP): see attached drawing.
Overtravel (OT): see attached drawing.
Movement Differential (MD): see attached drawing.

3-2-2 Shock Resistance: 300m/s{30G}Max.
(Without lever)

3-2-3 Vibration Resistance: 10 to 55 Hz amplitude of 1.5mm
(Without lever)

3-2-4 Terminal strength 2.3Kg (1 minute) in the
direction of the axis of
terminals

3.3 ENVIRONMENTAL

3-3-1. Ambient Temperature: -25°C to +80°C
(without dew condensation)

3-3-2 Storage temperature: -25°C ~ +65°C
(without dew condensation)

3-3-3 Humidity: 93% RH Max., 40°C for 96 Hrs.

3-3-4 Low temperature -40°C±3°C for 96 hrs

3-3-5 High temperature 85±2°C for 96 hrs

3-3-6 Unit weight Approx: 6.5g

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3.4 DURABILITY

- 3-4-1 Allowable Operation speed : 0.1 to 1,000 mm/sec
(without lever)
- 3-4-2 Max.operating cycle rate: Mechanical 600 cycles/min.
Electrical 60 cycles/min.
- 3-4-3 Mechanical Life: 50,000,000 cycles Operations
- 3-4-4 Electrical Life: 100,000 cycles Operations

4. MATERIALS:

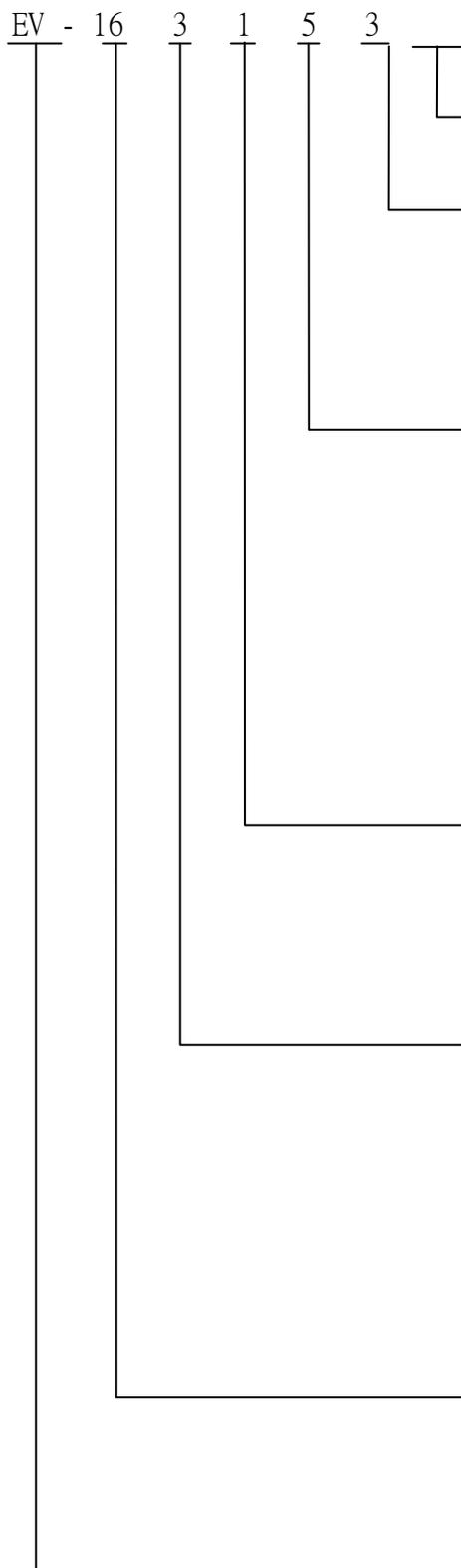
COMPONENT	MATERIAL	SPECIFICATION
4-1 Cover:	PBT+30%GF	Black
4-2 Case:	PBT+30%GF	Black
4-3 Button:	PBT+30%GF)	Red
4-4 Contact:	AgNi	AgNi
4-5 Leaf Spring:	Brass Copper	C2680R-1/2H
4-6 Moving Spring:	Beryllium Copper	C1720R-1/2HM
4-7 Terminal A:	Brass Copper	C2680R-1/2H
4-8 Terminal B:	Brass Copper	C2680R-1/2H
4-9 Terminal C:	Brass Copper	C2680R-1/2H
4-10 Guide:	Brass Copper	C2680R-1/2H
4-11 Lever:	Stainless	SU301CSP Hor3/4H

SPECIFICATION

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5. PART NUMBERING SYSTEM:



XX: Special product number

Operating force:(Without lever)

- 1: 100 gf Max. (11A)
- 2: 200 gf Max. (11A,16A)
- 3: 400 gf Max. (11A,16A,21A)

Actuator type:

- 0: Without lever 
- 1: Short straight lever 
- 2: Straight lever 
- 3: Long Straight lever 
- 4: Simulated roller lever 
- 5: Short Roller lever 
- 6: Roller lever 

Terminal type:

- 1: #187 Quick connect/solder terminal 
- 2: #187 Quick connect terminal 
- 3: #250 Quick connect terminal 

Contact arrangement;

- 1:Bottom COM,SPST-NO (1a) 
- 2:Bottom COM,SPST-NC (1b) 
- 3:Bottom COM,SPDT (1c) 
- 4:Side COM,SPST-NO (1a) 
- 5:Side COM,SPST-NC (1b) 
- 6:Side COM,SPDT (1c) 

Rating current:

- 11: 11 Ampere
- 16: 16 Ampere
- 21: 21 Ampere

Series name:

EV: V type micro switches

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6. PACKING

6-1 PACKING METHOD

Micro Switches are packed into tray and then packed into boxes.

6-2 INFORMATION ON LABEL (stuck to each box).

- | | |
|-------------------|-------------------------|
| (1) DESCRIPTION. | (8) DATE. |
| (2) LOT NO. | (9) MANUFACTURERS NAME. |
| (3) REPROCESS NO. | (10) ELECTRICAL. |
| (4) QUANTITY. | (11) RATING. |
| (5) TESTER NO. | (12) TEMPERATURE. |
| (6) ECE MARK. | (13) CONDUCTOR SIZE. |
| (7) QC STAMP. | (14) TORQUE. |

7. DRAWINGS

Micro Switch dimensions: see attached drawing.



EV-163153 Series Dimensions (Unit : mm)

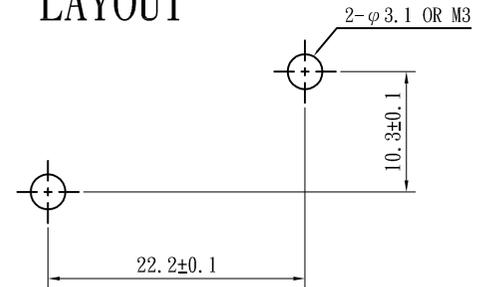
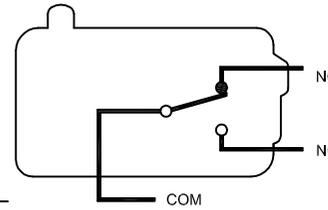
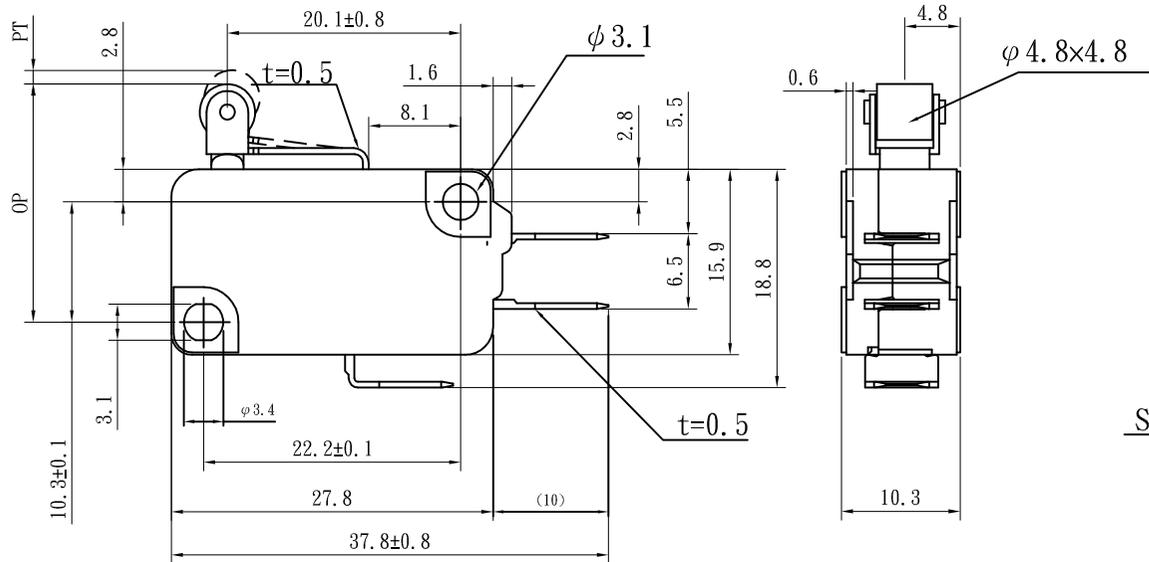
Rated Voltage : EV-16 AC125V 16A/AC250V 16A
EV-16 DC125V 0.6A/DC250V 0.3A



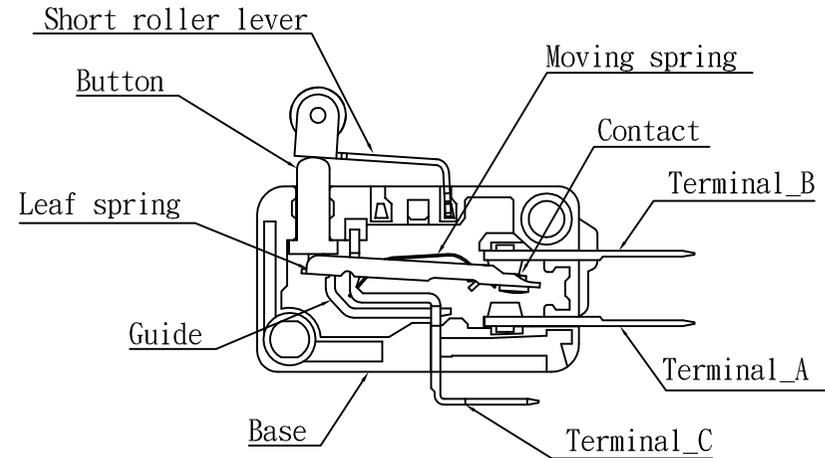
#187 Quick connect/solder terminal

CIRCUIT DIAGRAM

MOUNTING HOLE LAYOUT



CONSTRUCTION



1.	Operating Force (OF)	480gf (4.71N) Max.
2.	Release Force (RF)	50gf (0.49N) Min.
3.	Pre-travel (PT)	4.0mm Max.
4.	Overtravel (OT)	1.6mm Min.
5.	Movement Differential (MD)	1.5mm Max.
6.	Operation Position (OP)	18.7±1.2mm
7.	Free Position (FP)	

				NORMAL TOLERANCE		EXCEL CELL ELECTRONIC CO., LTD.				PART NUMBER		EV163153		
				RANGE	TOLERANCE									
				0-1	±0.1					UNIT		MM (INCH)	PART NAME	EV
				1-4	±0.3					SCALE		1.5:1	TYPE	----
				4-16	±0.5					SIZE		A4	FILE NAME	751163153A.DWG
				16-63	±0.8					PROJECTION			EDITION	A
				63-250	±1.0									
NO.	DETAILS	ALTERED BY	DATE	CHECK	Marcus Li	DESIGN	Ken Mo	DRAWN	Ken Mo					