

SPECIFICATIONS

Designation	Optical touch switch	
Item / Model No.	SW-101	
Sensing method	Thru-beam type photoelectric sensor (2 beam axes)	
Applicable standard	CSA 22.2 No.14, CSA 22.2 No.0.8, ANSI / NFPA 79, UL 508, EN 60947-5-2 (EMC only)	
Power supply	12 to 24 V DC $\pm 10\%$, Ripple P-P10 % or less	
Current consumption	100 mA or less (excluding external connection load)	
Output	Semiconductor Photo-MOS relay output $\times 3$	
	<ul style="list-style-type: none"> • Maximum load current: 100 mA • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 1.5 V or less (at 100 mA of load current) 	
	Output operation	Output 1 : When an object is detected (light is interrupted): OFF/ When an object is not detected (light is received): ON Output 2, 3 : When an object is detected (light is interrupted): ON/ When an object is not detected (light is received): OFF
Short-circuit protection	Incorporated	
Response time	100 ms or less when an object is detected, 50 ms or less when an object is not detected	
Time-out function	Switched between enabled and disabled by short-circuiting terminals (disabled when short-circuited)	
External input	0 to 1 V or 10 V to +V: Valid (External input indicator lights up) 4 to 6 V or Open: Invalid (External input indicator turns off)	
Indicators	Power indicator (POWER)	Green LED (Lights up when the power is ON)
	Operation indicator (OPE.)	Green LED (Lights up when an object is detected)
	External input indicator 1	Green LED (Lights up when external input 1 is valid)
	External input indicator 2	Orange LED (Lights up when external input 2 is valid)
	Fault indicator (FAULT)	Yellow LED (Blinks or lights up when fault occurs)
Protection	IP65 (IEC) TYPE1 (UL 50) (Excluding terminal part)	
Environmental resistance	Ambient temperature	-25 to $+50$ °C -13 to $+122$ °F (No dew condensation or icing allowed) Storage: -30 to $+70$ °C -22 to $+158$ °F
	Ambient humidity	30 to 85 % RH, Storage: 30 to 85 % RH
	Ambient illuminance	Incandescent light: 3,000 lx at the light-receiving face
	Voltage withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure
	Insulation resistance	20 M Ω , or more, with 500 V DC megger between all supply terminals connected together and enclosure
	Vibration resistance	10 to 500 Hz frequency, 3 mm 0.118 in amplitude in X, Y and Z directions for two hours each
Shock resistance	500 m/s ² acceleration (50 G approx.) in X, Y and Z directions for three times each	
Removable-type terminals	Connector	3.5 mm 0.138 in pitch, 2-level socket: 12 pins
	Terminal part	3.5 mm 0.138 in pitch spring gauge terminals: 6 pins $\times 2$ (FMC1,5/6-ST-3,5 manufactured by Phoenix Contact)
Cables	0.2 to 1.5 mm ² [including single wire or ferrule (sleeve)]	
Maximum cable length	Up to 20 m 65.617 ft (for cables less than 0.2 to 0.3 mm ²) Up to 100 m 328.084 ft (for cables from 0.3 to 1.5 mm ²)	
Material	Enclosure: Polycarbonate, Polyester, Nut: PBT., O-ring: Silicone rubber	
Weight	Net weight: 130 g approx. Gross weight: 200 g approx.	

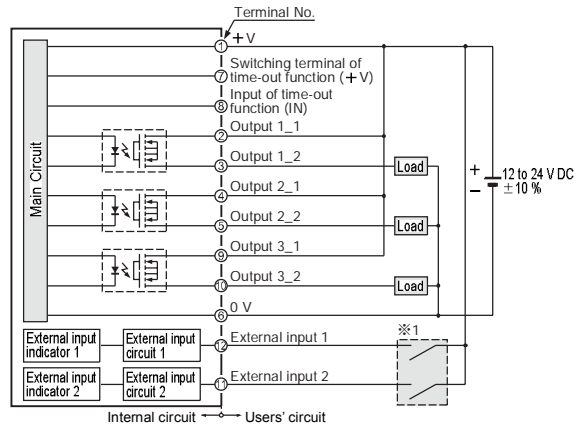
Note: Where measurement conditions have not been specified precisely, the conditions used were ambient temperature $+23$ °C $+73.4$ °F.

OPTIONS

Designation	Model No.	Description
Mounting tool	SW-MT1	Tool for tightening mounting nuts with a commercially-available wrench.
Sensing surface protective sheet	SW-PS1	Protects the sensing surface from dirt and scratches. 5 sheets per set

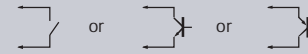
I/O CIRCUIT AND WIRING DIAGRAMS

In case of Minus Common



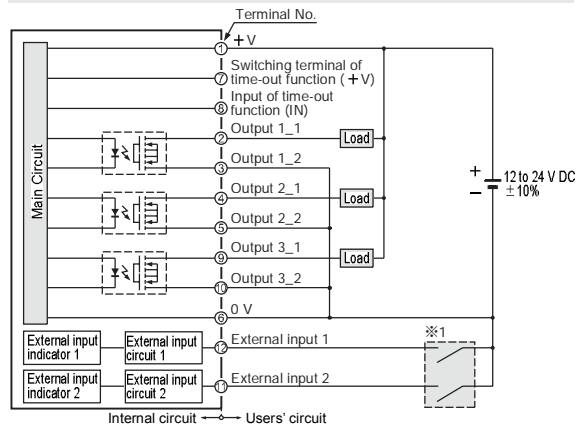
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Non-voltage contact or NPN open-collector transistor, PNP open-collector transistor



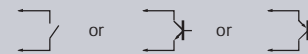
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Terminal arrangement diagram

