

# AC SWITCH -- MICRO SWITCH & ROCKER SWITCH

<p>LF-104</p>   	<p>LF-105</p>   
<p>WRSA-11F04</p> 	<p>WRSA-12F14</p> 
<p>WRSB-11F06</p>  	<p>WRSC-21-16</p>  

19-5-2006

# MICRO SWITCH

## Characteristics



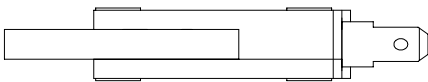
Product No.	Approved Standard	Circuit	Pre Travel	Movement different travel	Over Travel	Operating Position	Operating force	Release force	Soldering
<b>LF-104-16</b>	UL/cUL,VDE	1P2T	3.2 mm max.	1.2mm max.	1.3mm min.	15.3 ± 1.5mm	250gf max.	20 gf min.	Dip,Manual
<b>LF-104A-16 (without lever)</b>	UL/cUL,VDE		1.2 mm max.				500gf max.		
<b>LF-105-16</b>	UL/cUL,VDE	1P1T	3.2 mm max.				250gf max.		
<b>LF-105A-16 (without lever)</b>	UL/cUL,VDE		1.2 mm max.				500gf max.		

## Specifications

Rating (max.) (Resistive load)	Operating temperature range	Electrical Performance		
		Contact resistance	Insulation resistance	Voltage proof
16A 125V/250V AC	-25 °C to 105 °C	50 mΩ max.	100 MΩ min. 500 V DC	1,500 V AC for 1 minute

Mechanical Performance				
Terminal Strength	Actuator Strength	Solderability	Resistance to soldering heat	
			Dip soldering	Manual Soldering
5 kgf for 1 minute	1.5 kgf for 1 minute	230 ± 5 °C	260°C , 5 s	350 °C , 3 s

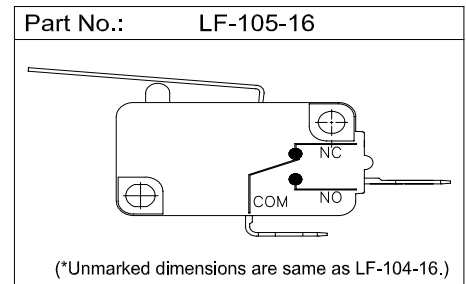
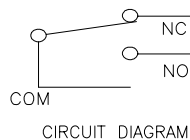
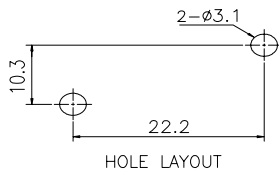
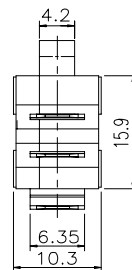
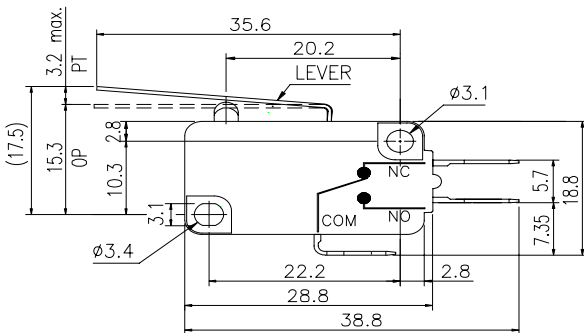
Endurance			Environmental Performance		
Rating (max.) (Resistive load)	Operating life without load	Operating life with load (load: as ratings)	Cold	Dry heat	Damp heat
16 A 125/250 VAC	10,000,000 cycles 500 mΩ max.	50,000 cycles 500 mΩ max.	-25°C for 96 hrs	105°C for 96 hrs	40°C 90 to 95% RH for 96 hrs



Part No.: LF-104-16



LF-105-16



# ROCKER SWITCH

## Characteristics

Series	Circuit	Travel	Operating temperature range	Soldering
WRSA-11F04	1P1T	3.5mm	-25 °C to 85 °C	Dip, Manual
WRSA-12F14	1P2T		-10 °C to 60 °C	

## Electrical Performance

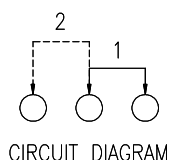
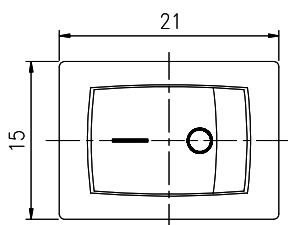
Series	Rating (max.)	Contact resistance	Insulation resistance	Withstand voltage
WRSA-11F04	3A 250V AC / 6A 125V AC	30 mΩ max.	100 MΩ min. 500 V DC	2,000 V AC for 1 min.
WRSA-12F14				1,000 V AC for 1 min.

## Solderability Performance

Series	Operating force	Terminal Strength	Actuator Strength	Solderability	Resistance to soldering heat	
					Dip soldering	Manual soldering
WRSA-11F04	400gf ± 200gf	6 kgf , 60 seconds	2.0 kgf , 60 seconds	230 ± 5 °C	260 °C , 5 seconds	350 °C , 3 seconds
WRSA-12F14		1 kgf , 15 seconds	3.0 kgf , 15 seconds			

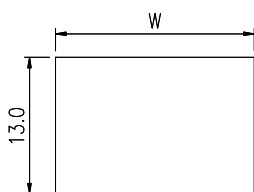
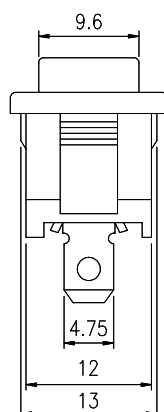
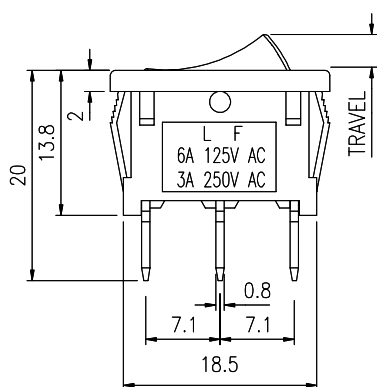
## Endurance, Environmental Performance

Series	Operating life without load	Operating life with load (load: as ratings)	Cold	Dry heat	Damp heat
WRSA-11F04	10,000 cycles , 100 mΩ max.	10,000 cycles , 100 mΩ max.	-25°C , 48 hrs	70°C , 48 hrs	40 °C , 90 to 95% RH for 96 hrs
WRSA-12F14		6,000 cycles , 100 mΩ max.			



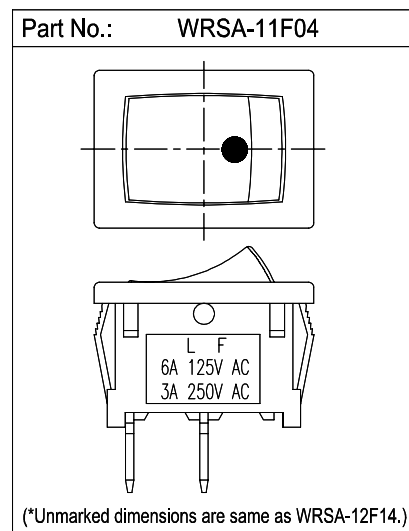
Part No.: WRSA-12F14

WRSA-11F04



MOUNTING HOLE

PANEL THICKNESS	DIM.W
0.75—1.0	19.4
1.0—2.0	19.6
2.0—2.5	20.2



# ROCKER SWITCH

CQC

## Characteristics

Series	Approved Standard	Circuit	Travel	Operating temperature range	Soldering
WRSB-11F06	CQC	1P1T	4.5mm	-0 °C to 85 °C	Dip, Manual

## Electrical Performance

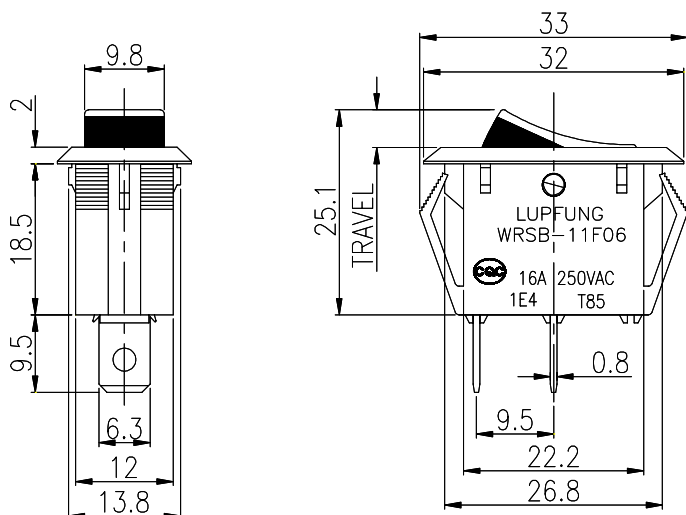
Rating (max.)	Contact resistance	Insulation resistance	Withstand voltage
16A 250V AC	50 mΩ max.	100 MΩ min. 500 V DC	2,000 V AC for 1 min. (between terminals)
			3,800 V AC for 1 min. (between terminals & frame)

## Mechanical & Solderability Performance

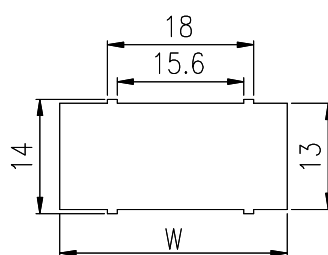
Operating force	Terminal Strength	Actuator Strength	Solderability	Resistance to soldering heat	
				Dip soldering	Manual soldering
500gf ± 200 gf	6 kgf for 1 min.	2 kgf for 1 min.	230 ± 5 °C	260°C , 5 seconds	350°C , 3 seconds

## Endurance, Environmental Performance

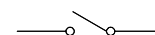
Operating life without load	Operating life with load (load: as ratings)	Cold	Dry heat	Damp heat
10,000 cycles , 500 mΩ max.	10,000 cycles , 500 mΩ max.	0 °C for 96 hrs	85°C for 96 hrs	40 °C , 90 to 95% RH for 96 hrs



PANEL THICKNESS	W
1.0	27.0
1.5	27.5
2.0	28.0



MOUNTING HOLE



CIRCUIT DIAGRAM

# ROCKER SWITCH



## Characteristics

Series	Approved Standard	Circuit	Angel	Operating temperature range	Soldering
WRSC-21	UL/cUL	2P2T	36°	-20 °C to 80 °C	Dip, Manual

## Electrical Performance

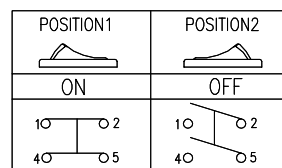
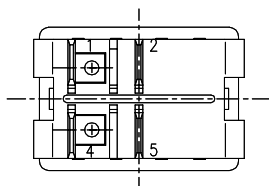
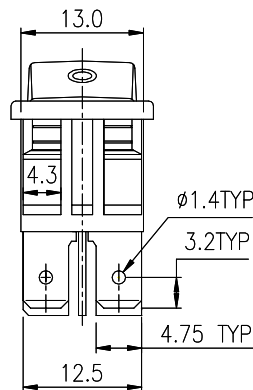
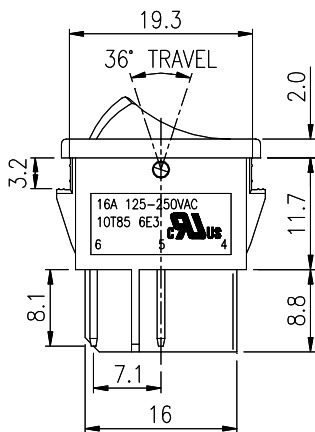
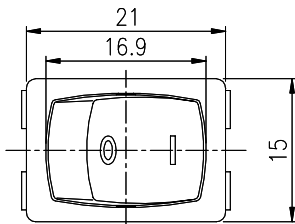
Rating (max.)	Contact resistance	Insulation resistance	Withstand voltage
16A 250V AC	20 mΩ max.	100 MΩ min. 500 V DC	2000 V AC for 1 min.

## Solderability Performance

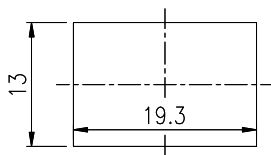
Operating force	Terminal Strength	Actuator Strength	Solderability	Resistance to soldering heat	
				Dip soldering	Manual soldering
600gf ± 300 gf	0.5 kgf for 1 min.	1 kgf for 1 min.	230 ± 5 °C	260°C , 5 seconds	350°C , 3 seconds

## Endurance, Environmental Performance

Operating life without load	Operating life with load (load: as ratings)	Cold	Dry heat	Damp heat
6,000 cycles , 500 mΩ max.	10,000 cycles , 500 mΩ max.	-25 °C for 96 hrs	85°C for 96 hrs	40 °C , 90 to 95% RH for 96 hrs



CIRCUIT DIAGRAM  
(BOTTOM VIEW)



MOUNTING HOLE (PANEL THICKNESS 3.8 MAX)