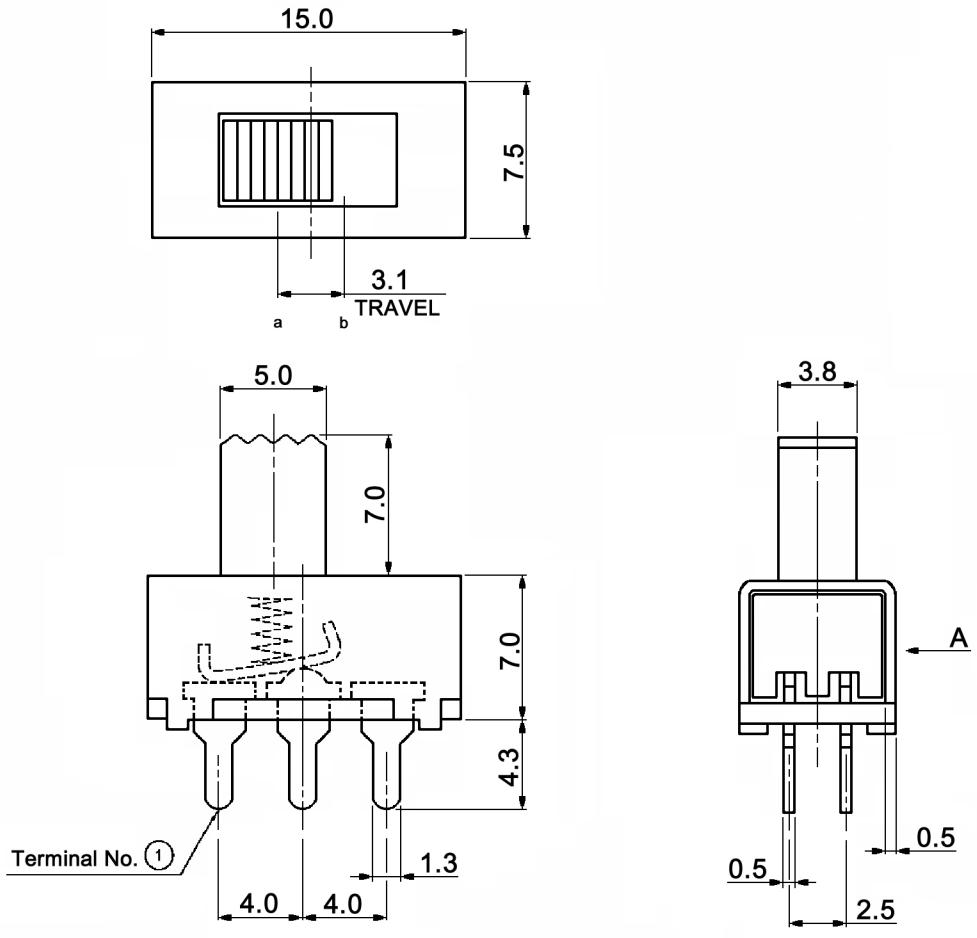
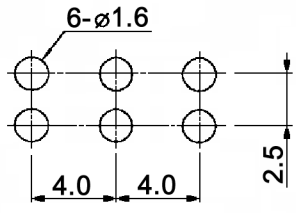
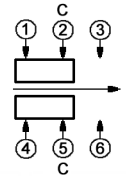


HOLE LAYOUT ⊕ 0.05



CIRCUIT DIAGRAM



C: COMMON PIN
BOTTOM VIEW

Material:

Base: phenolic resin, natural
Frame: SPCC, tin plated
Slider: PBT, black
Terminal: brass strip, silver plated
Contact plate: brass strip, silver plated
Spring: SWC, temper
RoHS compliant

Maßstab					Datum	Name
Oberfläche					05/07	dr
Zust	Änderung	Datum	Name			

MFP 221 N		
knitter-switch	30 11 27	Blatt 1/3

SPECIFICATION

1. General
   1) Operating temperature range -10 to 60 ℃.
   2) Standard test conditions shall be 5 to 35 ℃ in temperature and 45 to 85 % in humidity.

2. Rating DC 30V 0.3A

3. Change over timing Non-shorting

4. Electrical performance

	Item	Conditions		Specifications
1	Contact Resistance	a) 1 KHz +/- 200 Hz (20mA) b) DC 5V 1A by voltage drop method.		30 mohm or less.
2	Insulation Resistance	DC 500 V 1 minute	between terminals	100 Mohm or more.
			terminal & frame	100 Mohm or more.
3	Withstand Voltage	AC 500 V 1 min. (50/60Hz 2mA)	between terminals	No dielectric breakdown.
		AC 500 V 1 min. (50/60Hz 2mA)	terminal & frame	

5. Mechanical performance

	Item	Conditions	Specifications
1	Terminal Strength	A static load of 500 gf shall be applied to the tip of the terminals for 15 seconds in any direction. 1 cycle shall be made per 1 terminal.	Electrical performance shall be satisfied. Without damage of excessive looseness of terminals.
2	Actuator Strength	A static load of 3.0 kgf shall be applied for 15 seconds in a direction reverse to cause actuation of the switch.	Clause 5.4 and electrical performance shall be satisfied. Without excessive looseness of bending to the actuator and stopper.
3	Displacement of actuator	A static load of 100 gf shall be applied at the point 1 mm from the tip of the actuator and than displacement shall be measured.	1.0 mm p-p or less.
4	Operating force	Measure at the tip of actuator.	250gf ±100gf

6. Endurance performance

	Item	Conditions		Specifications
1	Solderability	Solder temperature 230 ± 5 ℃ Dipping time 3 ± 0.5 second		More than 75 % of the dipping covered by solder.
2	Soldering heat resistance	Solder bath method Solder temperature: 260 ± 5 ℃ Dipping time: 5 ± 1.0 second Thickness of PCB: 1.6 mm Immersion depth: Up to the surface of the board Solder iron method Bit temperature: 350 ± 10 ℃ Application time: 3 ± 1.0 second		Without deformation of frame or excessive losseness of terminals. Electrical performance shall be satisfied.
3	Heat Test	The switch shall be stored at a temperature of 70 ± 2 ℃ for 48 hours. Then the switch shall be maintained standard atmospheric condition for 1 hour, after which measurement shall be made within 1 hour.	Contact Resistance	Less than 100 mohm.
			Insulation resistance	4.2 shall be satisfied
			Operating force	5.4 shall be satisfied
			Terminal strength	5.1 shall be satisfied
			Appearance	No deformation or crack in molded part.
4	Cold Test	The switch shall be stored at a temperature of -25 ± 3 ℃ for 48 hours. Then the switch shall be maintained standard atmospheric condition for 1 hour, after which measurement shall be made within 1 hour.	Contact Resistance	Less than 100 mohm.
			Insulation resistance	4.2 shall be satisfied
			Operating force	5.4 shall be satisfied
			Appearance	No deformation or crack in molded part.

	Item	Conditions		Specifications
5	Humidity Test	The switch shall be stored at a temperature of 40 ± 2 ℃ and a humidity of 90 to 95 % for 96 hours. Then the switch shall be maintained standard atmospheric condition for 1 hour, after which measurement shall be made within 1 hour.	Contact Resistance	Less than 100 mohm.
			Insulation resistance	More than 10 Mohm after 500 V DC is applied for 1 minute.
			Withstand voltage	Withstand AC 250 V for 1 minute.
			Appearance	No deformation or crack in molded part or excessive rust or discoloration.
6	Change of temperature	The switch shall be subjected to 5 successive change of temperature cycles, each as shown in table below.	Contact Resistance	Less than 100 mohm.
			Insulation resistance	4.2 shall be satisfied
			Withstand voltage	4.3 shall be satisfied
			Operating force	5.4 shall be satisfied
			Appearance	No deformation or crack in molded part.
7	Vibration	Only endurance conditioning by a frequency sweep shall be made. The entire frequency range, from 10 to 55 Hz and return to 10 Hz be transversed in 1 minute. Amplitude (total excursion): 1.5 mm This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular axis (a total of 6 hours).	Terminal strength	5.1 shall be satisfied
			Actuator strength	5.2 shall be satisfied
			Operating force	5.4 shall be satisfied
				Electrical performance shall be satisfied.
8	Shock	Peak acceleration: 735 m/s^2 Duration of pulse: 6 msec. Three successive shock shall be applied in both directions of mutually perpendicular axis (a total of 18 shocks).	Terminal strength	5.1 shall be satisfied
			Actuator strength	5.2 shall be satisfied
			Operating force	5.4 shall be satisfied
				Electrical performance shall be satisfied.
9	Life test	(Endurance without load) A switch shall be subject to 5,000 cycles at a speed of 15 to 20 cycles per min. without load.	Contact resistance	Less than 100 mohm.
			Insulation resistance	More than 10 Mohm after 500 V DC is applied for 1 minute.
			Withstand voltage	Withstand AC 250 V for 1 minute.
			Operating force	Relative to the previously specified value. ±30%

	Temperature	Duration
1	-10 +/- 3℃	30 min.
2	Standard atmospheric condition	10-15 min.
3	70 +/- 2℃	30 min.
4	Standard atmospheric condition	10-15 min.

Maßstab					Datum	Name
Oberfläche					05/07	dr
Zust	Änderung	Datum	Name			

kniffer-switch

MFP 221 N

30 11 27

Blatt 3/3