

SPD



Surge Protective Device

The surge protector is used on an AC 50/60Hz, 220V/380V power system and protects the electric system from a surge over-voltage.



Imax : 20kA (220V)

Imax : 80kA (220V)

Imax : 40kA (380V)

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SP series (Box type)

Product description

The SP series surge protective device is applied to the alternating current 50/60Hz, 220V/380V power system and provides the protection from the surge overvoltage of an electric system. Moreover, the protection module, disconnectable device (fuse), and fastened power and ground wires are organized into the all-in-one steel cabinet with convenient installation and stability. If the protective device is normal, the display becomes green. The display becomes red after operation (abnormal or after an accident).



Product rating

- Single phase 2W+G (SPL)

SPD Type	SPL (AC 110V)	
	SPL3-20S	
Class	Class III	
Rated system [Pole]	2W+G	
Rated voltage, Un AC [V]	110, 220	
Max. continuous operating voltage, Uc AC [V]	275	
Voltage protection level, Up [kV]	1.5	
Operation voltage, Uoc [kV/kA]	20/10	
Nominal discharge current, In (8/20 μ s) [kA, per mode]	-	
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	-	
Response time, t _A [ns]	< 5 ns	
Operating temperature range [°C]	-40 ~ +70°C	
Operating frequency [Hz]	50/60 Hz	
Mounting on	Screw	
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red	
Protection degree	IP20	
Protection mode	L-N, N-PE (G), L-PE (G)	
Ground	TN	
Certification	CE	



Product rating

- Single phase 2W+G (SPL)

SPD Type	SPL (AC 220V)	
	SPL2-40S	SPL2-80S
Class	Class II	
Rated system [Pole]	2W+G	
Rated voltage, Un AC [V]	220	
Max. continuous operating voltage, Uc AC [V]	385	
Voltage protection level, Up [kV]	2.5	3.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	20	40
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	40	80
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	-	-
Response time, t _A [ns]	< 5 ns	
Operating temperature range [°C]	-40 ~ +70°C	
Operating frequency [Hz]	50/60 Hz	
Mounting on	Screw	
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red	
Protection degree	IP20	
Protection mode	L-N, N-PE (G)	
Ground	TN	
Certification	KS, CE	

Product rating

- Three phase 3W+G (SPT) AC 220V



SPD Type	SPT (AC 220V)			
	SPT2-40S	SPT2-80S	SPT1-120S	SPT1-160S
Class	Class II		Class I, Class II	
Rated system [Pole]	3W+G			
Rated voltage, Un AC [V]	220			
Max. continuous operating voltage, Uc AC [V]	385			
Voltage protection level, Up [kV]	2.5	3.0	2.0	2.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	20	40	-	-
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	40	80	120	160
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	-	-	6.5	6.5
Response time, t _A [ns]	< 5 ns			
Operating temperature range [°C]	-40 ~ +70°C			
Operating frequency [Hz]	50/60 Hz			
Mounting on	Screw			
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red			
Protection degree	IP20			
Protection mode	L-PE (G)			
Ground	TN			
Certification	KS, CE			

* SPT can not be used in Delta wiring grounding system

Product rating

- Three phase 3W+G (SPT) AC 380V



SPD Type	SPT (AC 380V)			
	SPT2-40S	SPT2-80S	SPT1-120S	SPT1-160S
Class	Class II		Class I, Class II	
Rated system [Pole]	3W+G			
Rated voltage, Un AC [V]	380			
Max. continuous operating voltage, Uc AC [V]	385			
Voltage protection level, Up [kV]	2.5	3.0	2.0	2.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	20	40	-	-
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	40	80	120	160
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	-	-	6.5	6.5
Response time, t _A [ns]	< 5 ns			
Operating temperature range [°C]	-40 ~ +70°C			
Operating frequency [Hz]	50/60 Hz			
Mounting on	Screw			
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red			
Protection degree	IP20			
Protection mode	L-PE (G)			
Ground	TN			
Certification	KS, CE			

* SPT can not be used in Delta wiring grounding system

SP series (Box type)

Product rating

- Three phase 3W+G (SPT) AC 440V



SPD Type	SPT (AC 440V)			
	SPT2-40S	SPT2-80S	SPT1-120S	SPT1-160S
Class	Class II		Class I, Class II	
Rated system [Pole]	3W+G			
Rated voltage, Un AC [V]	440			
Max. continuous operating voltage, Uc AC [V]	385			
Voltage protection level, Up [kV]	2.5	3.0	2.0	2.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	20	40	-	-
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	40	80	120	160
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	-	-	6.5	6.5
Response time, t _A [ns]	< 5 ns			
Operating temperature range [°C]	-40 ~ +70°C			
Operating frequency [Hz]	50/60 Hz			
Mounting on	Screw			
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red			
Protection degree	IP20			
Protection mode	L-PE (G)			
Ground	TN			
Certification	KS, CE			

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Product rating

- Three phase 4W +G (SPY) 127S



SPD Type	SPY (AC 127/220V)				
	SPY2-40S	SPY2-80S	SPY1-120S	SPY1-160S	SPY1-200S *
Class	Class II		Class I, Class II		
Rated system [Pole]	4W+G				
Rated voltage, Un AC [V]	127/220				
Max. continuous operating voltage, Uc AC [V]	385				
Voltage protection level, Up [kV]	2.5	3.0	2.0	2.0	2.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	20	40	-	-	-
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	40	80	120	160	200
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	-	-	6.5	6.5	12.5
Response time, t _A [ns]	< 5 ns				
Operating temperature range [°C]	-40 ~ +70°C				
Operating frequency [Hz]	50/60 Hz				
Mounting on	Screw				
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red				
Protection degree	IP20				
Protection mode	L-N, N-PE (G)				
Ground	TN				
Certification	KS, CE				

* The wiring direction of SPY1-200S is located on the side. (Refer to external dimension)

Product rating

- Three phase 4W+G (SPY) 220S



SPD Type	SPY (AC 220/380V)				
	SPY2-40S	SPY2-80S	SPY1-120S	SPY1-160S	SPY1-200S *
Class	Class II		Class I, Class II		
Rated system [Pole]	4W+G				
Rated voltage, U_n AC [V]	220/380				
Max. continuous operating voltage, U_c AC [V]	385				
Voltage protection level, U_p [kV]	2.5	3.0	2.0	2.0	2.0
Nominal discharge current, I_n (8/20 μ s) [kA, per mode]	20	40	-	-	-
Maximum discharge current, I_{max} (8/20 μ s) [kA, per mode]	40	80	120	160	200
Lightning impulse current, I_{imp} (10/350 μ s) [kA, per mode]	-	-	6.5	6.5	12.5
Response time, t_A [ns]	< 5 ns				
Operating temperature range [°C]	-40 ~ +70°C				
Operating frequency [Hz]	50/60 Hz				
Mounting on	Screw				
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red				
Protection degree	IP20				
Protection mode	L-N, N-PE (G)				
Ground	TN				
Certification	KS, CE				

* The wiring direction of SPY1-200S is located on the side. (Refer to external dimension)

Product rating

- I_{imp} 12.5kA Class I SPD



SPD Type	SPL1-13/50S	SPT1-13S	SPY1-13/50S
Class	Class I		
Rated system [Pole]	2W+G	3W+G	4W+G
Rated voltage, U_n AC [V]	220	380	380/220
Max. continuous operating voltage, U_c AC [V]	320		
Voltage protection level, U_p [kV]	L-N: 1.2, N-PE: 1.8	L-N: 1.2, N-PE: 1.8	L-N: 1.2, N-PE: 1.8
Nominal discharge current, I_n (8/20 μ s) [kA, per mode]	-	-	-
Maximum discharge current, I_{max} (8/20 μ s) [kA, per mode]	-	-	-
Lightning impulse current, I_{imp} (10/350 μ s) [kA, per mode]	12.5/50	12.5	12.5/50
Response time, t_A [ns]	< 5 ns		
Operating temperature range [°C]	-40 ~ +70°C		
Operating frequency [Hz]	50/60 Hz		
Mounting on	Screw		
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red		
Protection degree	IP20		
Protection mode	L-N, N-PE (G)	L-PE (G)	L-N, N-PE (G)
Ground	TN/TT/IT		
Certification	KS, CE		

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SP series (Box type)

Product rating

- Iimp 25kA Class I SPD



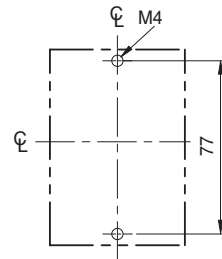
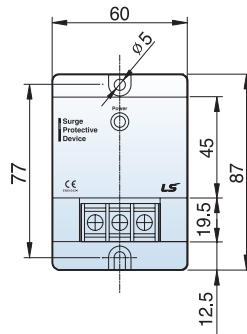
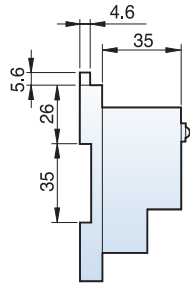
SPD Type	SPL1-25/50S	SPT1-25S	SPY1-25/100S
Class	Class I		
Rated system [Pole]	2W+G	3W+G	4W+G
Rated voltage, Un AC [V]	220	380	380/220
Max. continuous operating voltage, Uc AC [V]	320		
Voltage protection level, Up [kV]	L-N: 1.3, N-PE : 2.0	L-N: 1.3, N-PE : 2.0	L-N: 1.3, N-PE : 2.0
Nominal discharge current, In (8/20 μ s) [kA, per mode]	-	-	-
Maximum discharge current, I _{max} (8/20 μ s) [kA, per mode]	-	-	-
Lightning impulse current, I _{imp} (10/350 μ s) [kA, per mode]	25/50	25	25/100
Response time, t _A [ns]	< 5 ns		
Operating temperature range [°C]	-40 ~ +70°C		
Operating frequency [Hz]	50/60 Hz		
Mounting on	Screw		
Operation status indication	Normal operation: Green, Abnormal/After an accident: Red		
Protection degree	IP20		
Protection mode	N-PE (G)	L-PE (G)	L-N, N-PE (G)
Ground	TN/TT/IT		
Certification	KS, CE		

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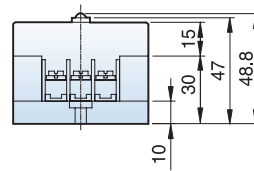
External dimension

SPL3-20S

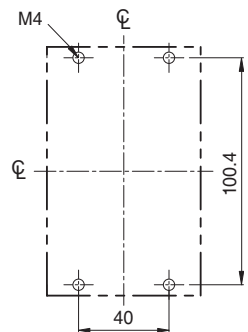
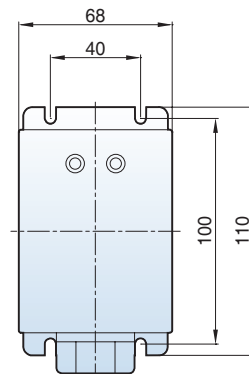
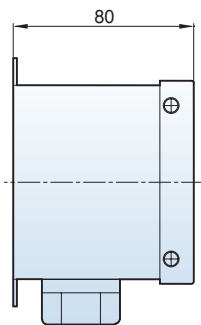
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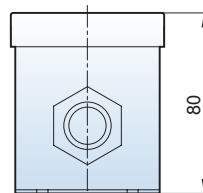
(Panel dimension diagram)



SPL2-40S



(Panel dimension diagram)

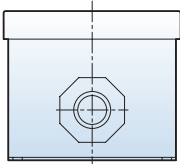
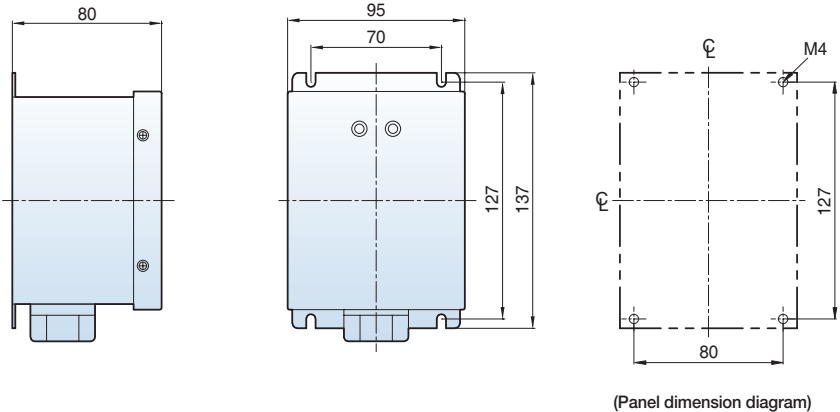


SP series (Box type)

External dimension

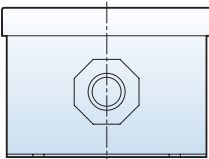
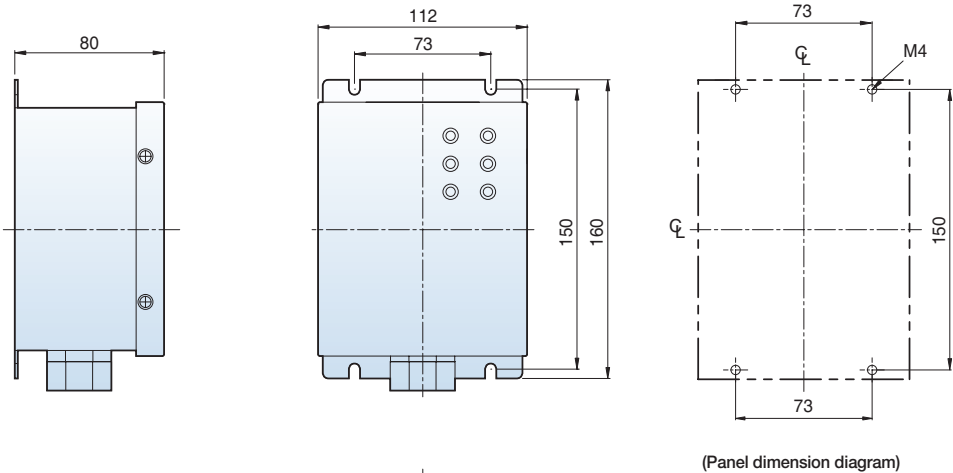
SPL2-80S

[Unit: mm]



SPT2-40S 220V, 380V, 440V

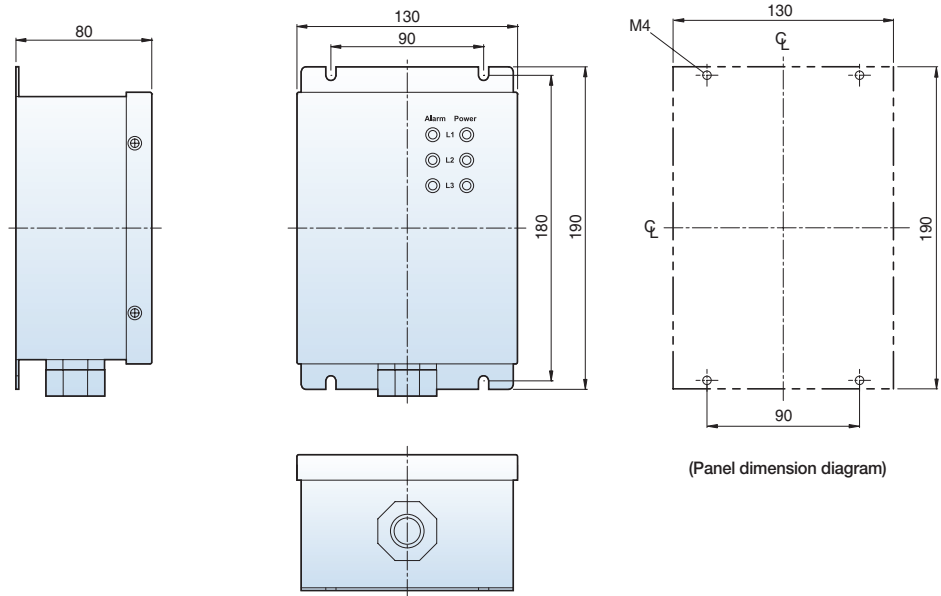
SPY2-40S 127/220V, 220V



SPT2-80S 220V, 380V, 440V

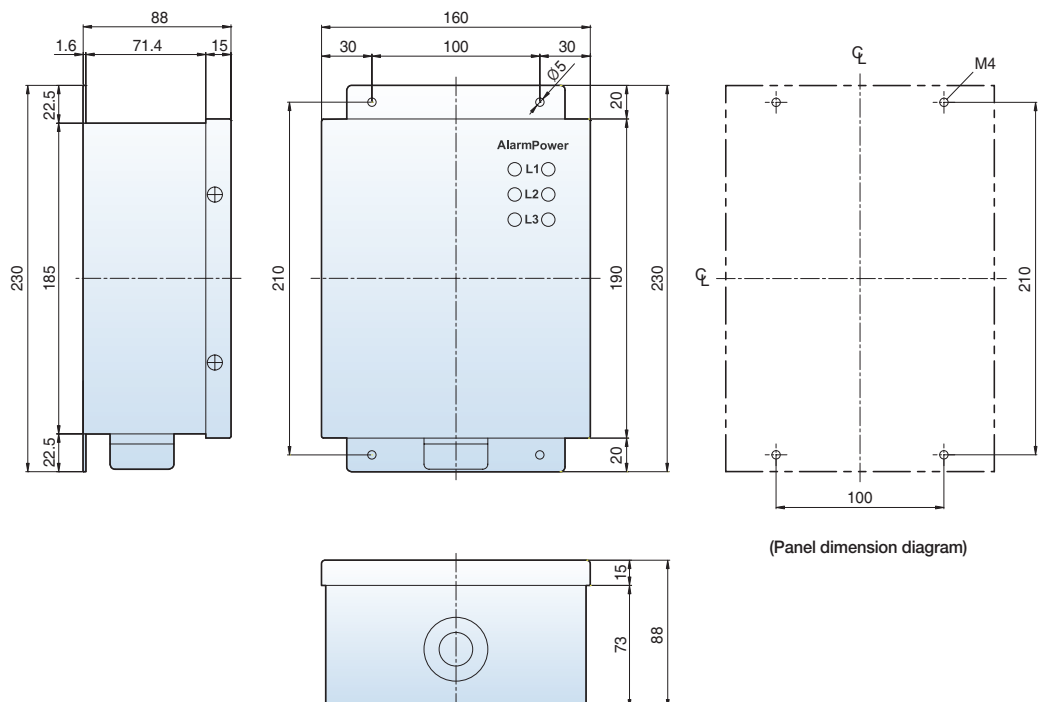
[Unit: mm]

SPY2-80S 127/220V, 220V



SPT1-120S 220V, 380V, 440V, SPY1-120S 127/220V, 220V

SPT1-160S 220V, 380V, 440V, SPY1-160S 127/220V, 220V

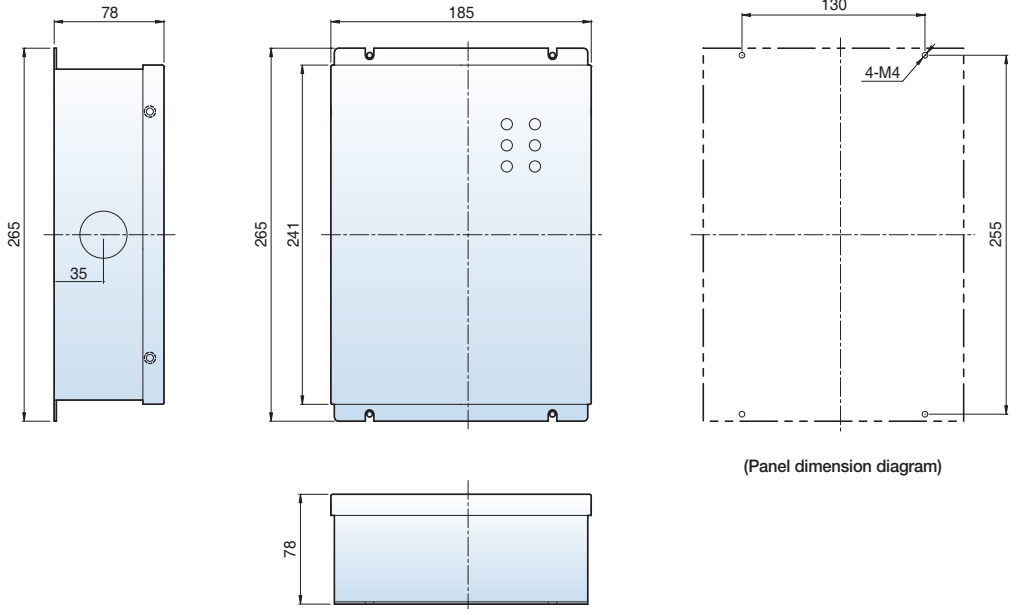


SP series (Box type)

External dimension

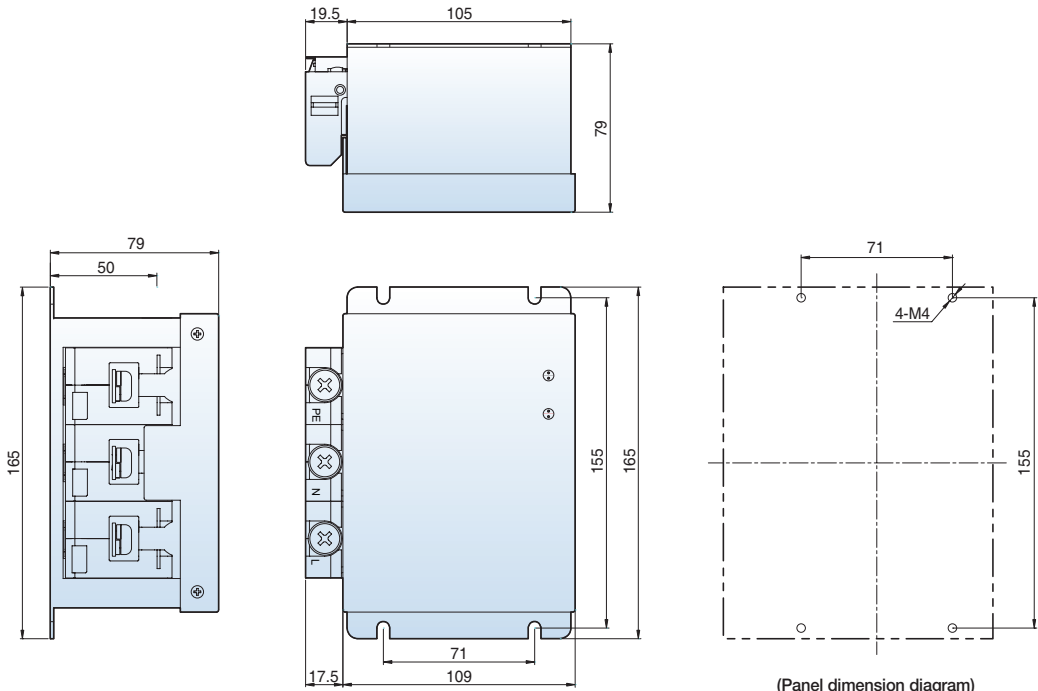
SPY1-200S 127/220V, 220V

[Unit: mm]



(Panel dimension diagram)

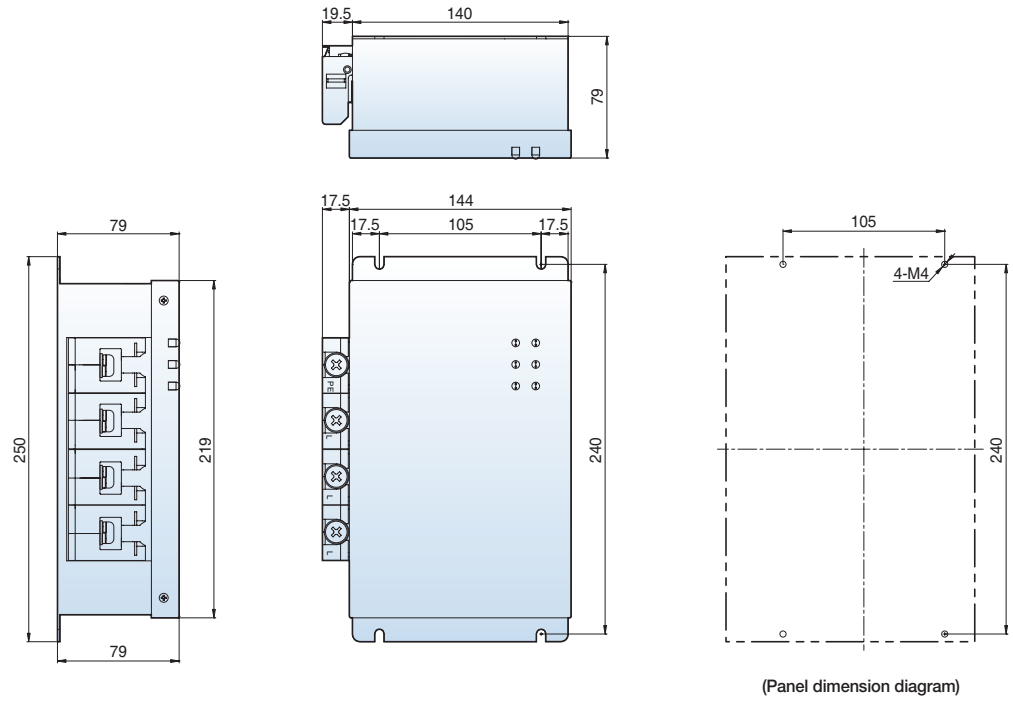
SPL1-13/50S 220V, SPL1-25/100S



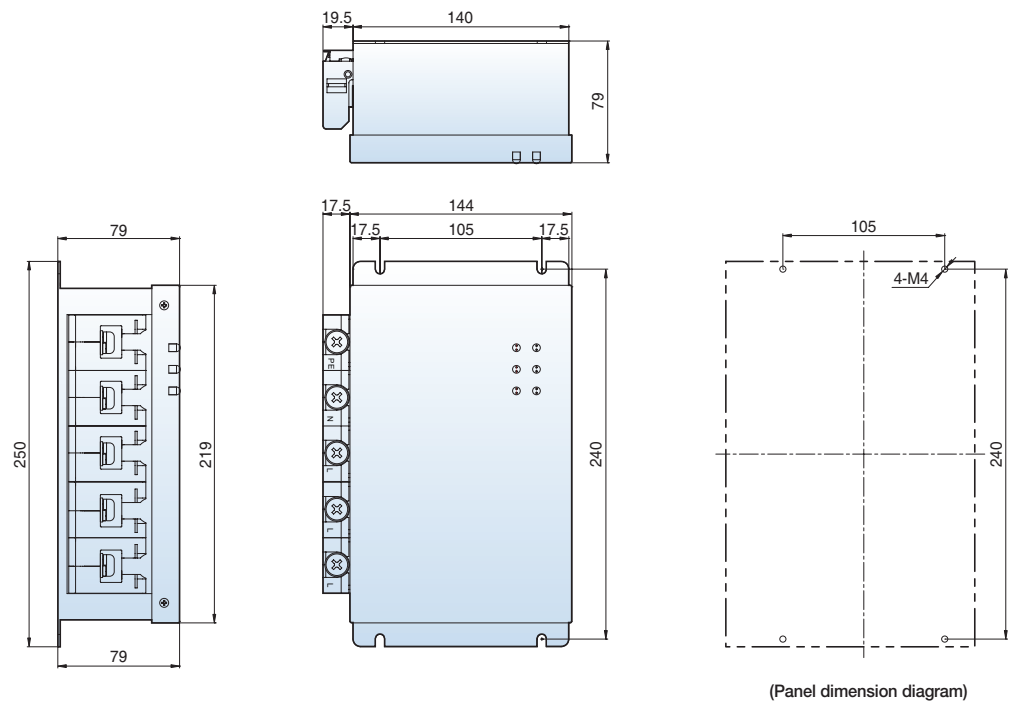
(Panel dimension diagram)

SPT1-13/50S, SPT1-25/100S

[Unit: mm]



SPY1-13/50S, SPY1-25/100S



SP series (Box type)

SP series Ordering

SP	T	2	—	40	S	220V
Basic type	Phase array	Class level		I _{max} /I _{imp}	Type	U _e
SP	L 2W+G	3 Class III		40 In 20kA, I _{max} 40kA	S Basic type	220V 2W+G or 3W+G
	T 3W+G	2 Class II		80 In 40kA, I _{max} 80kA		380V 3W+G
	Y 4W+G	1 Class I		120 I _{imp} 6.5kA, I _{max} 120kA		440V 3W+G
				160 I _{imp} 6.5kA, I _{max} 160kA		220/127V 4W+G
				200 I _{imp} 12.5kA, I _{max} 200kA		380/220V 4W+G
				13 I _{imp} 12.5kA		
				13/50 I _{imp} 12.5kA (L-N), 50kA (N-PE)		
				25 I _{imp} 25kA		
				25/100 I _{imp} 25kA (L-N), 100kA (N-PE)		