



## ELS1 Series Surge Protective Device

### Application

<b>Standard</b>	Confirming to IEC61643-1
<b>Protection</b>	Protect electric system and on-loading electrical apparatus from thunder and instantaneous over-voltage
<b>Ambient temperature</b>	-5°C to +45°C
<b>Number of poles</b>	1P, 2P, 3P, 4P
<b>Electric ratings</b>	230/400V, AC50/60Hz
<b>Response time</b>	Less than 25ms
<b>On-Off indicating window</b>	Green normal function Red functionless, immediate replacement required
<b>Pollution grade</b>	II
<b>Installation class</b>	I, II, III
<b>Type of terminal</b>	Pin type
<b>Terminal capacity</b>	Solid wire cross-section is 1-6mm <sup>2</sup> Stranded wire cross-section is 0.75-4mm <sup>2</sup>
<b>Installation</b>	Mounting on 35mm DIN rail
<b>Width</b>	17.5mm per pole
<b>Ground system</b>	*TT, TN-S, TN-C-S* are applicable to the ground system of the protector

### ELS1 Surge Protective Device



Type	Poles	Uc (V)	In (kA)	Imax (kA)	Up (kV)	Applicable grounding system
ELS1-D/1-140-5	1	140	5	10	<0.8	Under AC110V and DC
ELS1-D/1-275-5	1	275	5	10	<1.2	TN-C, IT, TN-S
ELS1-D/1-320-5	1	320	5	10	<1.5	TN-C, IT, TN-S
ELS1-D/1-385-5	1	385	5	10	<1.8	TT
ELS1-D/1-420-5	1	420	5	10	<2.0	TT
ELS1-D/2-140-5	2	140	5	10	<0.8	Under AC110V and DC
ELS1-D/2-275-5	2	275	5	10	<1.2	TN-C, IT, TN-S
ELS1-D/2-320-5	2	320	5	10	<1.5	TN-C, IT, TN-S
ELS1-D/2-385-5	2	385	5	10	<1.8	TT
ELS1-D/2-420-5	2	420	5	10	<2.0	TT
ELS1-D/2Q-385-5	3	385	5	10	<2.0	
ELS1-D/3N-275-5	3	275	5	10	<1.2	*3+1" Compage
ELS1-D/3N-320-5	3	320	5	10	<1.5	*3+1" Compage
ELS1-D/4-275-5	4	275	5	10	<1.2	TN-C, IT, TN-S
ELS1-D/4-320-5	4	320	5	10	<1.5	TN-C, IT, TN-S
ELS1-D/4-385-5	4	385	5	10	<1.8	TT
ELS1-D/4-420-5	4	420	5	10	<2.0	TT

ELS1 Surge Protective Device	Type	Poles	Uc (V)	In (kA)	Imax (kA)	Up (kV)	Applicable grounding system
	ELS1-C/1-140-15	1	140	15	40	<0.8	Under AC110V and DC
	ELS1-C/1-275-20	1	275	20	40	<1.2	TN-C, IT, TN-S
	ELS1-C/1-320-20	1	320	20	40	<1.5	TN-C, IT, TN-S
	ELS1-C/1-385-20	1	385	20	40	<1.8	TT
	ELS1-C/1-420-20	1	420	20	40	<2.0	TT
	ELS1-C/1-550-20	1	550	20	40	<2.8	AC380V
	ELS1-C/2-140-15	2	140	15	10	<0.8	Under AC110V and DC
	ELS1-C/2-275-20	2	275	20	40	<1.2	TN-C, IT, TN-S
	ELS1-C/2-320-20	2	320	20	40	<1.5	TN-C, IT, TN-S
	ELS1-C/2-385-20	2	385	20	40	<1.8	TT
	ELS1-C/2-420-20	2	420	20	40	<2.0	TT
	ELS1-C/2Q-320-20	3	320	20	40	<1.5	TN-C, IT, TN-S
	ELS1-C/2Q-385-20	3	385	20	40	<2.0	TN-C, IT, TN-S
	ELS1-C/3N-320-20	3	320	20	40	<1.5	*3+1" Compage
	ELS1-C/3N-385-20	3	385	20	40	<1.8	*3+1" Compage
	ELS1-C/3N-420-20	3	420	20	40	<2.0	*3+1" Compage
	ELS1-C/3-320-20	3	320	20	40	<1.5	TN-C, TN-C-S, TN-S
	ELS1-C/3-385-20	3	385	20	40	<1.8	TN-C, TN-C-S, TN-S
	ELS1-C/3-420-20	3	420	20	40	<2.0	TN-C, TN-C-S, TN-S
	ELS1-C/4-275-20	4	275	20	40	<1.2	TN-C, TN-C-S, TN-S
	ELS1-C/4-320-20	4	320	20	40	<1.5	TN-C, TN-C-S, TN-S
	ELS1-C/4-385-20	4	385	20	40	<1.8	TT
	ELS1-C/4-420-20	4	420	20	40	<2.0	TT

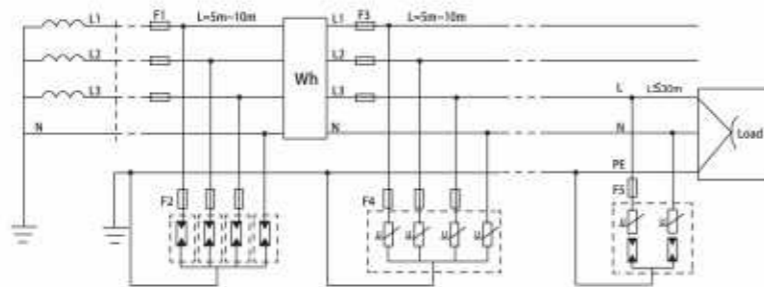
ELS1 Surge Protective Device	Type	Poles	Uc (V)	In (kA)	Imax (kA)	Up (kV)	Applicable grounding system
	ELS1-B/3-320-30	3	320	30	60	<2.0	TN-C, TN-C-S, TN-S
	ELS1-B/4-320-30	4	320	30	60	<2.0	TN-C, TN-C-S, TN-S
	ELS1-B/3-385-30	3	385	30	60	<2.5	TT
	ELS1-B/4-385-30	4	385	30	60	<2.5	TT
	ELS1-D/2+1	3	320	5	10	<1.5	Voltage limit TT
	ELS1-C/2+1	3	320	15	40	<1.5	Voltage limit TT
	ELS1-D/3+1	4	320	5	10	<1.5	Voltage limit TT
	ELS1-C/3+1	4	320	15	40	<1.5	Voltage limit TT
	ELS1-C/3+1G	4	320	15	40	<1.5	Voltage limit TT
	ELS1-B/3+1G	4	320	30	60	<1.8	Voltage limit TT
	ELS1-D/2+1	3	255	20	40	<1.5	Voltage switch TT
	ELS1-C/2+1	3	255	40	12	<2.0	Voltage switch TT
	ELS1-D/3+1	4	255	20	40	<1.5	Voltage switch TT
	ELS1-C/3+1	4	255	40	12	<2.0	Voltage switch TT
	ELS1-C/3+1G	4	255	100	60	<2.5	Voltage switch TT
	ELS1-B/3+1G	4	255	100	60	<2.5	Voltage switch TT

Technic SG data	Type	ELS1-D/ [-140-5]	ELS1-D/ [-275-5]	ELS1-D/ [-320-5]	ELS1-D/ [-385-5]	ELS1-D/ [-420-5]	ELS1-C/ [-140-15]	ELS1-C/ [-275-20]	ELS1-C/ [-320-20]	ELS1-C/ [-385-20]	ELS1-C/ [-420-20]	ELS1-C/ [-550-20]	ELS1-B/ [-320-30]	ELS1-B/ [-385-30]	
Max.continuous operationSG vol.(Uc)		140V	275V	320V	385V	420V	140V	275V	320V	385V	420V	550V	320V	385V	
Level of vol. protection(U <sub>p</sub> <)		0.8kV	1.2kV	1.5kV	1.8kV	2.0kV	0.8kV	1.2kV	1.5kV	1.8kV	2.0kV	2.5kV	2.0kV	2.5kV	
NominSG discharge current I <sub>n</sub> (8/20us)kA		5	5	5	5	5	15	20	20	20	20	20	30	30	
Max discharge current I <sub>max</sub> (8/20us)kA		10	10	10	10	10	40	40	40	40	40	40	60	60	
ns		<25			<			25			<25				
Pole width(mm)								18							
Colour		yellow						gray						red	
Protection degree		IP20						IP20						IP20	
MetirSG of cover		PBT						PBT						PBT	
Circuit current		10~16A						25~32A						25~32A	
Wiring	L, N	2.5~35mm <sup>2</sup>						2.5~35mm <sup>2</sup>						2.5~35mm <sup>2</sup>	
	PE	4.0~35mm <sup>2</sup>						4.0~35mm <sup>2</sup>						4.0~35mm <sup>2</sup>	

## 2. How to select surge protectors

- The voltage should be  $\leq U_c$ ;
- $U_p <$  maximum impulse withstands;
- Different protectors should be selected according to various grounding system and protection mode.

## 3. Allocation of surge protectors under TT system

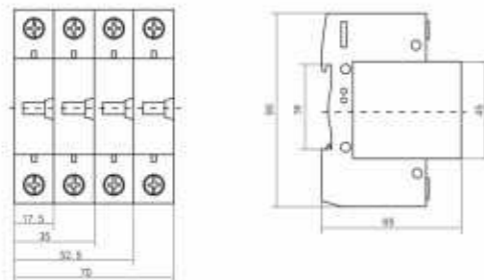


ELS1-B series surge protector  
Lightening protection area the boundary between LPZ0 & LPZ1  
Protection category: B  
Over-voltage mounting category:III  
Rated impulse withstand voltage:4000V  
Parameters of discharge:U<sub>imp</sub> and I<sub>n</sub>  
Master power distribution cabinet

ELS1-C series surge protector  
Lightening protection area the boundary between LPZ1 & LPZ2  
Protection category:C  
Over-voltage mounting category:II  
Rated impulse withstand voltage:2500V  
Parameters of discharge:I<sub>max</sub> and I<sub>n</sub>  
Branch power distribution cabinet

ELS1-D series surge protector  
Lightening protection area the boundary between LPZ2 & LPZ3  
Protection category:D  
Over-voltage mounting category:I  
Rated impulse withstand voltage:1500V  
Parameters of discharge:U<sub>oc</sub> and I<sub>sc</sub>  
Terminal of power distribution

## 4. Overall and Mounting Dimensions



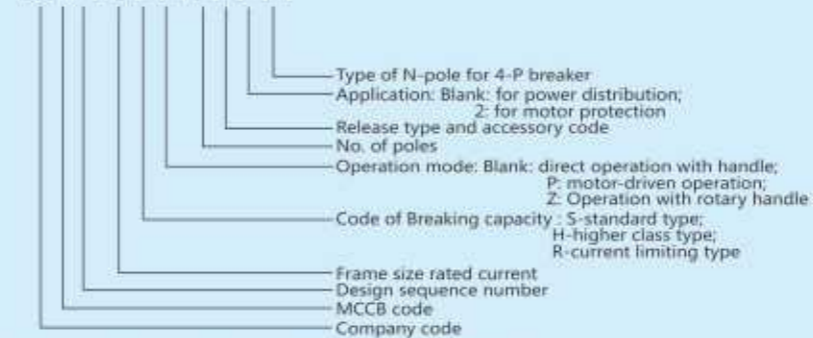
# ELM1 series Moulded Case Circuit Breaker

## Application

ELM1 series moulded case circuit breaker is one of products developed and manufactured by adopting international advanced technology. It is supplied with rated insulating voltage 690V and used for circuit of A.C. 50/60Hz, rated operating voltage AC 400V (or below), rated operating current up to 1250A for infrequent changing over and starting of the motors.The products conforms to IEC60947-2 standard.

## Type Designation

EL M 1-□□□□□□□□



Note : There are 4 types of N-pole for 4P breaker  
A: Without current release components, N-Pole is always at making status, not makes and breaks with other three poles;  
B: Without current release components, N-Pole makes with the other three poles(N-pole first makes then breaks);  
C: With current release components, N-Pole makes and breaks with other three poles(N-pole first makes then breaks);  
D: With current release components, N-Pole is always at making status, not makes and breaks with other three poles;