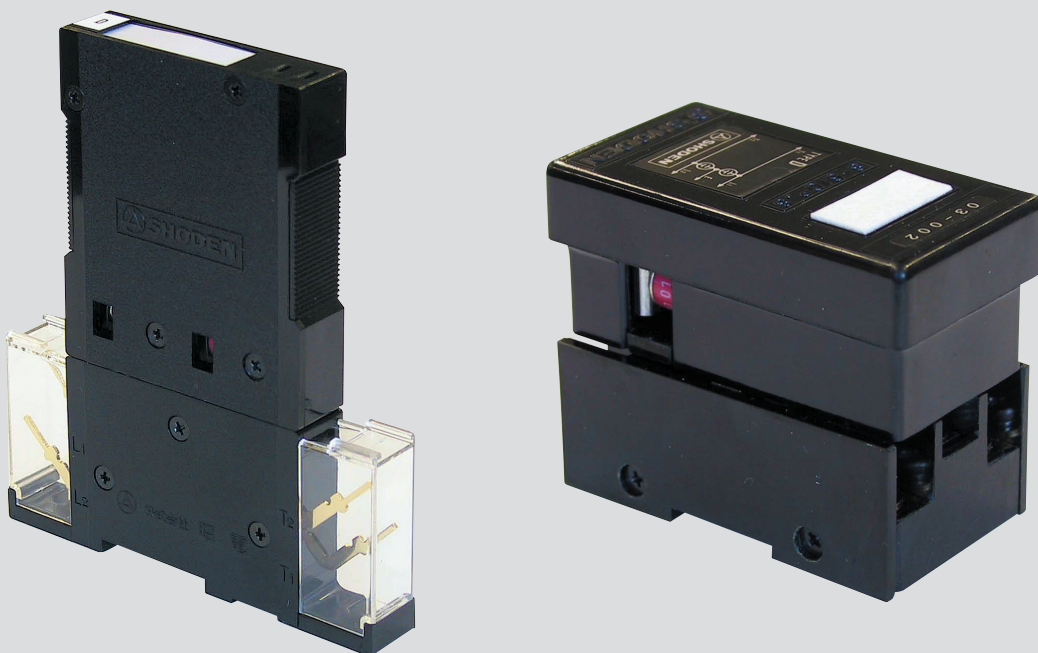


S-600 series

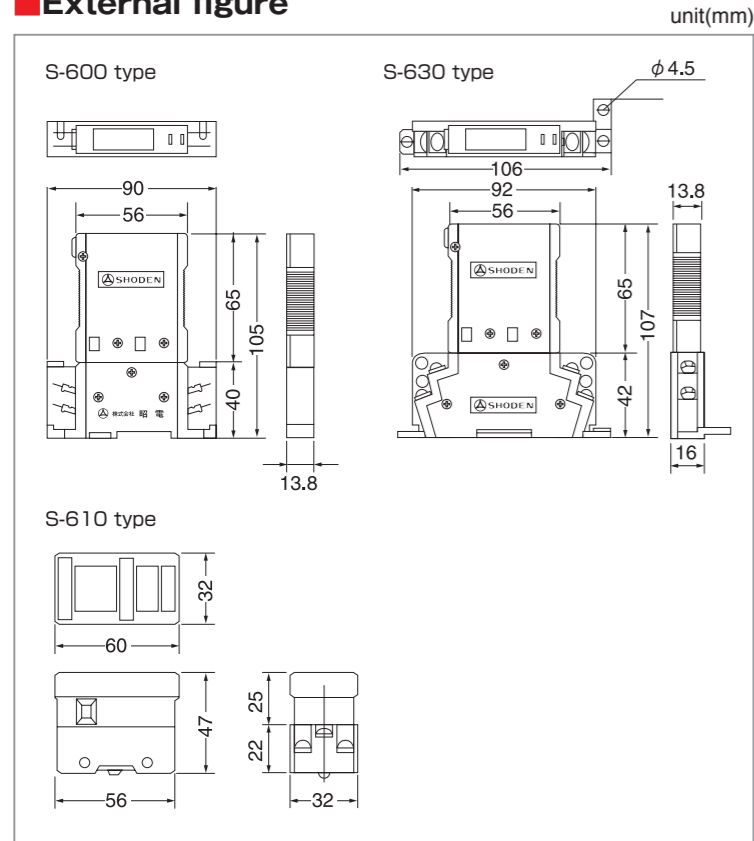


According to the circuit construction, protection level, current withstanding, function and form various types are lined up.

Cable protector consists of protector plug with plug-in structure and protector socket (elastic contact protector) and protector plug can be put in and taken out without instantaneous line break. According to the circuit construction, protection level, current withstanding, function and form a lot of line up is prepared.

- Application to data transmission is also possible. According to the application there are various protection circuit constructions. Application can be changed easily by change of protector plug.
- The contacts are plated by gold and can keep perfect contact for the use of long time.
- According to the wiring method of plug and socket (screw, soldering, wrapping) protector socket can be selected.

External figure



Standards

PAT	384709,571007
Japan standard for electric power	571007
Regulations of communication for protection of electric power facilities	JEAC-6011

Conditions of use

Surrounding temperature	-20°C ~ +60°C
Relative humidity	30% ~ 90% (Dew-condensation is not allowed)
Allowable current of protector socket	continuous by 500mA

Feature of protection circuit

S-600A2, S-610A2	To the classified A-1 of Japan standard for electric power D-205 a thermistor is added to cut off the applied overcurrent.
S-600B	Insulated coil and semiconductor are used. Suitable for AC-signal line.
S-600D, S-610D, S-600DS, S-600DT	For protection of telephone line and the equipments with relatively high voltage withstanding, also in case that unoccupied line is used as shield line these types are suitable. DS and DT types have high current withstanding and are suitable for use in the region where frequency of lightning strike is very high, and are also suitable for protection measures to electro magnetic induction.
S-600D [J], S-610 [J]	Gas-filled arrester and semiconductor-element are connected in series. Suitable for protection of DC-signal line and DC-power supply circuit.
S-600GC	Circuit is constructed mainly with neutralization coils and has excellent protection performance for carrier transmission line.
S-600GD	This type shows excellent protection performance between lines due to combination of neutralization coil and semiconductor element etc. and is suitable for protection of high frequency small signal circuit.
S-600HS [J], S-610HS [J]	These circuit constructions are suitable for protection of analog signal and telemeter signal transmission lines and can be used also for protection of the equipments with low current and voltage withstanding between lines and between line and ground, besides for protection of the line with polarity. Several kind of type for circuit voltage DC12, 24, 45, 65V etc. are available.
S-600M II	Suitable for protection of FDM carrier transmission line and analog signal transmission line. Especially in case of balance line this type shows excellent protection performance between lines.
S-600PCM	Developed for protection of PCM carrier transmission line and shows excellent protection performance.
S-600TD	Developed for protection of digital electronic telephone exchange (PBX) and shows excellent protection performance

- ※1 In case that power supply overlapped with the line has no grounding or has grounding at neutral point with high resistance, transmission level becomes 140V, 0.25A and in case that power supply has tendency characteristic, becomes DC220V, 0.25A.
- ※2 Possible to use independently of characteristic impedance of the line. However transmission performance shows the measured value at 600 Ω.
- ※3 Performance of elastic contact socket, in which protector plug is put in, is shown (state without plug).
- ※4 The performance of the protector plug including the inside insulation coil is shown (only the case of S-600B type).
- ※5 Initial max. value means the max. value appeared in the time from the apply of impulse voltage to 10 μs passed. The max. value in operation means the max. value appeared after 10 μs passed and under continuous apply impulse voltage.
- ※6 Under the more lower voltage and current than the given values the following current doesn't appear.
- ※7 [12] for DC 12V is DC13.5V.
[24] for DC 24V is DC27V.
[48] for DC 12V is DC53V.

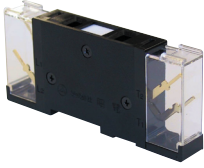
Specifications

Type-name	S-600type	S-600A2	S-600B	S-600C	S-600D	S-600DS	S-600DT
Type-name according to Japanese standard for electric power D-205	S-610type	S-610A2	-	-	S-610D	-	-
Application	for general use (A) 1a	for general use (A) 1a	for general use (A) 2	-	for general use (A) 1a	-	-
Transmission frequency band (Hz)	DC, 16.0.3k ~ 3.4K	0.3k ~ 300K	DC, 0.3k ~ 3.4K	DC, 0.3k ~ 3.4K	DC, 16.0.3k ~ 2M	-	-
Operational attenuation	less than 0.5	less than 1.0	less than 0.5	less than 0.5	less than 0.1	-	-
Transmission level *1	+10dBm(DC70V)	+10dBm	DC140V	+10dBm(DC70V·0.25A)	+10dBm(DC70V)	-	-
Impedance (Ω)	- *2	600 ± 20%	- *2	- *2	- *2	- *2	- *2
DC-resistance (one side line) (Ω)	less than 20	-	less than 5	-	-	-	-
Line side applied voltage	AC4kV 2 second						
AC	to ground	less than 300V					less than 500V
	between lines	less than 300V	less than 15V	less than 300V			
Line side applied voltage	1.2/50 μs 10kV						
Impulse	to ground *5	initial max. value less than 1,500V	less than 300V	less than 1,500V			
	in operation	less than 20V					
between lines *5	initial max. value	less than 1,500V	less than 25V	less than 1,500V			
	in operation	less than 10V					
Current withstanding	AC	AC4A 2 second					AC10A 2 second
	Impulse	8/20 μs 4kA					8/20 μs 10kA
Different color indication of S-600 type protectors	gray	red	yellow	white			

S-600DF [J] *7	S-600GC	S-600GD	S-600HS [J] *8	S-600M II	S-600PCM	S-600TD
S-610DF [J] *7	-	-	S-610HS [J] *8	-	-	-
-	-	for general use (A) 3	-	for general use (A) 2	-	-
for DC-Signal line	for carrier transmission line (with DC overlapped)	for PCM carrier transmission line	for data transmission line (for the equipments with weak current and voltage withstanding)	for MDF carrier transmission line	for PCM carrier transmission line	for digital telephone exchange
DC, 16.0.3k ~ 2M	DC, 0.3k ~ 300K	DC, 50k ~ 2M	DC ~ 20K	DC, 16, 0.3k ~ 150K	DC, 50k ~ 1.5M	DC, 16, 0.3k ~ 400K
less than 0.1	less than 0.5		less than 0.5		less than 0.7 (772kHz)	less than 0.5 (150kHz) less than 1.5 (400kHz)
DC110V	DC140V	4Vo-p	*7	+10dBm(DC140V)	4Vo-p(DC60V)	+20dBm(DC170V)
- *2	150 ± 10%	110 ± 10%	- *2	- *2	110 ± 10%	150kHz 600, 400kHz 150
-	less than 1		5 ± 10%	-	5 ± 10%	less than 20
Line side applied voltage			AC4kV 2 second			
to ground			less than 50V	less than 300V	less than 200V	
less than 300V		less than 10V	less than 50V	less than 10V	less than 15V	
Line side applied voltage			1.2/50 μs 10kV			
less than 1500V	less than 300V	less than 100V	less than 1,000V	less than 450V		
less than 500V	less than 20V			less than 40V		
less than 1500V	less than 25V	less than 50V	less than 25V			
less than 500V	less than 10V					
-	AC4A 2 second		-	AC4A 2 second		
8/20 μs 4kA	8/20 μs 4kA					
white	yellow		green	yellow	green	

S-600 series

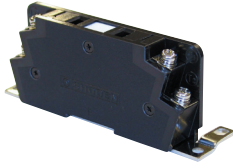
For the both connections, soldering and wrapping



S-600 type elastic contact socket

This contact socket can be equipped with S-600 type protector plug. Block with optional number of pair can be mounted on MDF etc. Terminal has suitable form for the both connections, soldering and wrapping to be able to hold a lot of pair line all at once.

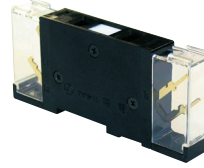
For connection with M4 screw



S-630 type elastic contact socket (S-630 type TS)

S-600 type protector plug can be put in and connection with M4 screw is possible.

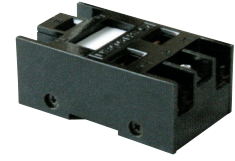
for connection with 1.2mm cable



S-600TS-B type elastic contact socket (S-600 type TS-B)

Terminals of outer line side can be connected with 1.2 mm core diameter cable by soldering. Equipment side terminals have as same as S-600 type the structure for both connections, soldering and wrapping.

for connection with M3 screw



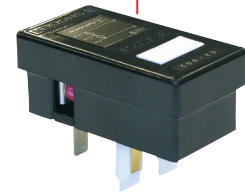
S-610 type elastic contact socket (S-610 type TS)

S-610 type protector plug can be put in. Function is the same level as S-600 type. Connection with cable corresponds to M3 screw. This structure is suitable especially for the line with a small pair number.



S-600 type protector plug (S-600 type PS)

According to the application there are various type protection circuit structure and replacement of protector plug can be done easily without instantaneous line break. Besides a monitor plug can be put in the protector socket and can easily confirm the transmission signals.



S-610 type protector plug (S-610 type PS)



S-600 type TS + S-600 type PS



S-630 type TS + S-600 type PS



S-600 type TS-B + S-600 type PS



S-610 type TS + S-610 type PS

Option (S-600 type)



plug cord for test



Test plug (C-IP Jack)



plug for line break



plug cord for monitor

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