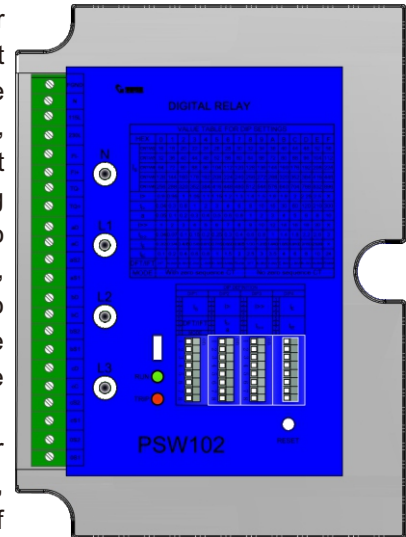


PSW102 type CT powered protection unit

Summary >>>

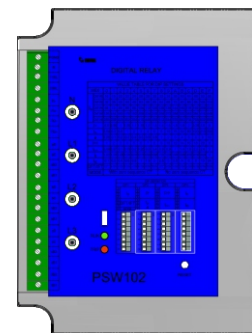
PSW102CT self-powered protection device is a 10Kv feeder protection device which has the function of over current, fast breaking protection and grounding protection according to the use of domestic users. With the use of ONT-W type power transformer, power supply is obtained by CT from the current line . Current quick-break protection, over current protection and grounding protection can be realized by driving the tripping coil so as to achieve low power without auxiliary power supply. The device, which not only saves the cost of the manufacturer, but also increases the stability of the system, solves the problem of the life of the conventional power supply battery so as to achieve the maintenance free.

PSW102 is especially suitable for medium voltage power distribution system breaker cabinet and boundary load switch, constitutes a protection system with the special ONT - W series of current transformers and trip coil (24 v). Safe and reliable, whose life can be up to 25 years.



Features >>>

- Using the CT power supply technology, no external power supply, low cost, long period of maintenance- free;
- Support the definite-time of over current protection, fast break protection, grounding protection and inverse-time overcurrent protection, the setting of protection value is flexible;
- With zero sequence current sampling terminal, test the protection system Without external electric current;
- With USB port, can update the program through USB port;
- Adjusting all constant value by DIP switch or PDA handheld terminal;
- With the gateway interface and gateway interface, easy to trip and confirm of the emergency;
- With emergency tripping from distant AC220V.



Application >>>

PSW102 is applied to power system and industrial field, which can provide selective short circuit and grounding protection for feeder or transformer in two power distribution network. The product is the self-powered digital multi-functional relay without any external power supply. which provides a great convenience for the installation site without auxiliary power supply conditions or remote areas of poor condition. This relay mainly installed in the power distribution ring network cabinet, and draw power from primary circuit of current transformer. PSW102 can also measure the zero sequence current by the entry of magnetic current transformer with internal calculation or external 1A rated current.

Technical data >>>

Basic data	
Rated power	50/60 Hz
Heat load capacity	Long term 2.5X maximum rated CT current Short-term 1s 25kACT Primary current 3s 25kACT Primary current
Power consumption	0.1VA
Limiting power / Split gate power	2VA
Power frequency withstand voltage	2kV/1
Impulse withstand voltage	5kV
Temperature range	
Operating temperature range	-25°C to +55°C
Storage temperature range	-40°C to +70°C
Accuracy	
Trip temperature	Time limit : Set value 1% Absolute value $\pm 10\text{ms}$ Time limit: Depending on the characteristics of the current level and the selection Absolute value $\pm 10\text{ms}$
Earth-fault protection	$I_e > \geq I_s$ Range setting value $\leq 5\%$ $I_e > \leq I_s$ Range setting value $\leq 5\%$
Protection of electric current for a period of current protection	
Measurement range	$0.9 \times I_{smin} \dots 20 \times I_{smax}$
Starting current	alue range $0.9 \dots 2.5 \times I_s$
Fixed value resolution / step	$I_s \times 0.9 \dots 2.5$
Time limit for the time limit of the flow unit trip time	0.04s to 300s
Setting value of inverse time characteristic	N1VN V1NV E1NV Long inverse time Special curve: RI INV、HR fuse、FR fuse
Time factor	0.05 to 10, Step 0.05, through interface adjustment

Two section current protection / current speed protection	
Starting current I_{st} >> Fixed value range	1...20 x I_s
Fixed value resolution / step	I_s x 1,2,3,4,5,6,7,8,9,10,12,14,16,18,20, quit
Time limit action time	t >> Value range 0.04...3.0s
Fixed value resolution / step	0.04, 0.07, 0.1, 0.15, 0.2, 0.25, 0.3, 0.4, 0.6, 0.8, 1.0, 1.4, 1.8, 2.2, 2.6, 3.0
Earth-fault protection	
Electric current	Internal calculation of current formation 0.2 to 2.5x I_s , through interface adjustment
Trip time	0.1 to 20s, through interface adjustment
Electromagnetic compatibility test	
Electrostatic discharge test	IEC61000-4-2 2008 Class 4 Electro-contact discharge 8kV Air discharge 15kV
Radiated electromagnetic field disturbance test	IEC61000-4-3 2010 Class 2
Fast transient interference test	Source, Power input ± 2 kV, 2.5kHz Other inputs and outputs ± 2 kV, 5kHz IEC61000-4-4 2012 Class 3
Insulation test	
Frequency withstand voltage	1min 2kV, 50Hz
Impulse withstand voltage	5kV
Insulation resistance	500 V, >500 M Ω
Mechanical test	
Vibration test	Vibration response: 10...150Hz 0.035mm/0.5g Vibration endurance: 10...150Hz, 1g
Impact test	Impulse response 15g, Pulse three times in all directions
Impact test	10g, In the direction of the impact of 1000
Environmental test	
High temperature test	+55°C 16h
Low temperature test	-25°C 16h
Storage test	+70°C 96h , -25°C 96 h

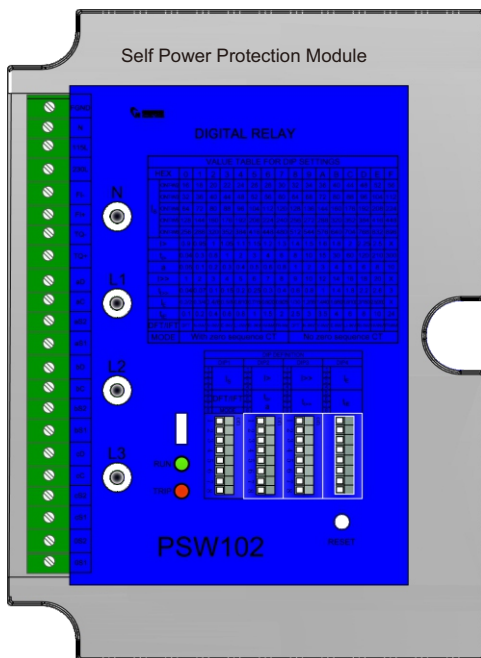
Current mutual inductance parameter >>>

For reliable operation, the minimum operating current of PSW102 is 0.9 times of the lowest rated current of the corresponding current transformer, and rated primary current.
(as shown in the following table):

CTModel	Line rated current range (Ie)	Long term running current value	Linear measurement range
W1	8--28A	2.5×28A	7.2--20×28.8
WE2	16--56A	2.5×56A	14.4--20×57.6
W2	16--56A	2.5×56A	14.4--20×57.6
W3	32--112A	2.5×112A	28.8--20×115.2
W4	64--224A	2.5×224A	57.6--20×230.4
W5	128--448A	2.5×448A	115.2--20×460.8
W6	256--896A	2.5×896A	230.4--20×921.6

Note: the WE2 is more accurate than W2 in the lower operating current range.

Setting switch >>>



Running lights: green light flashing, said the normal operation
Watch: red light, said the brake command has been issued

First group

1-4 bit, set the I_s value, I_s value depends on the working current value of the protected device is 1.1~4 times to W series current transformer rated current
5-8, set a protection action time characteristic curve, there are 8 group action time contoured curves, respectively is: the general inverse time (Nint), very inverse, extremely inverse and inverse time long time, RI, HV fuse characteristic, the whole range of the fuse characteristic



Second groups

1-4 bit, set a section / overcurrent protection action current value, the value is 0.9~2.5I_s, a total of 16 groups
5-8 bit, set a period of time / overcurrent protection action time limit, the time limit for 0.04S~300S, a total of 16 groups; the inverse time limit factor from 0.05~10 total of 16 groups;



Third groups

1-4 bit, set the two section / quick break protection action current value, the value is I_s~20I_s, a total of 16 groups
5-8 bit, set the time limit of two / quick break protection action, time limit 0.04S~3S, a total of 16 groups;

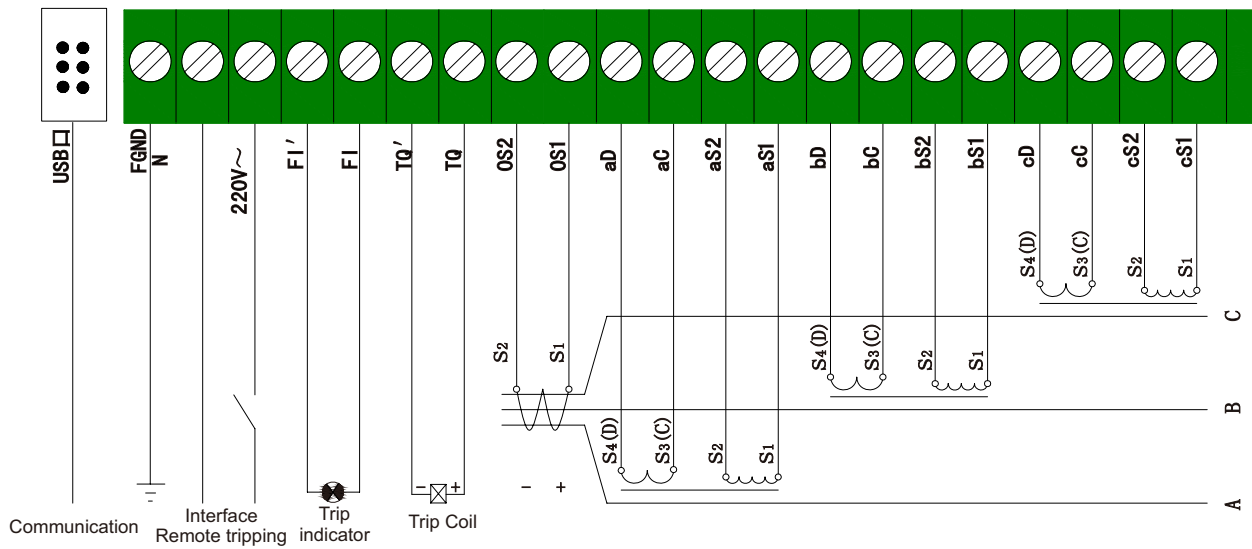


Second groups

1-4 bit, set the single phase to ground protection action current value, the value is 0.01~2.5I₀, a total of 16 groups
5-8 bit, set the time limit for the single phase to ground protection, time limit 0.1S~20S, a total of 16 groups



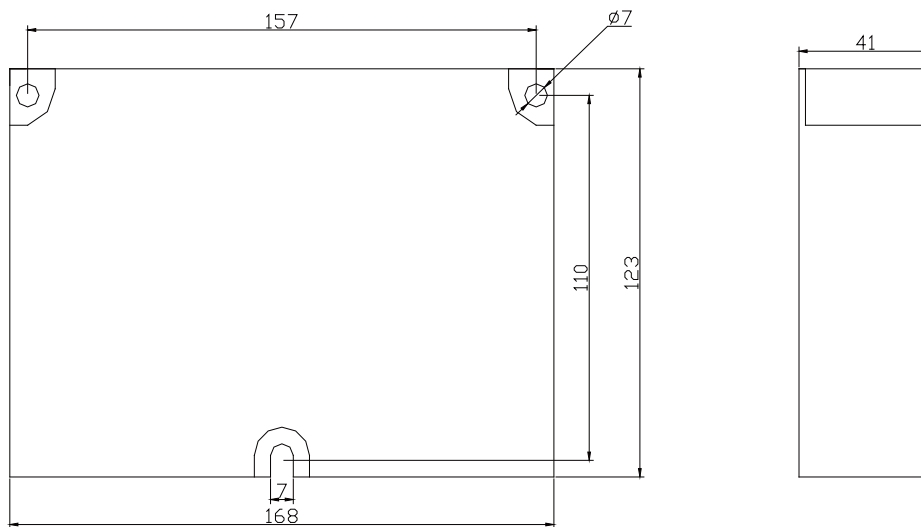
Wiring diagram >>>



Device structure >>>

The device is made of flame retardant plastic shell, which is cast in epoxy resin, and the protection is not influenced by external environment.

Device size: 168*123*41; Fixed hole : 3* Φ 7



PSW106 liquid crystal type protective device

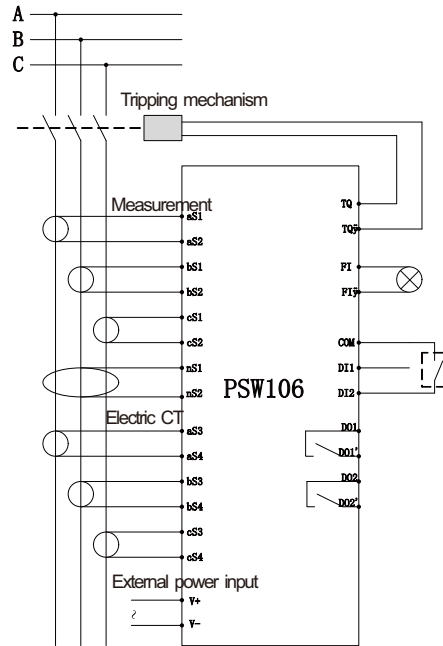
Features >>>

- Energy required to run the device can be provided by current transformer or an external 220V power supply;
- The secondary rated input current is 1A or 5A;
- Optional protection function: Definite time or Inverse time limit overcurrent;
- The protection module has the advantages of compact structure, embedded panel structure design, convenient installation;
- Fault information be record and check;
- Can be set by the value of liquid crystal, easy to use;
- Reserved SCADA excuse, with 232 or RS485 interface;
- Function and display function of phase current and grounding current measurement during operation;
- With 2 input interfaces, can be configured to switch position state input;
- Has 2 dry contact output used for automatic function expansion.

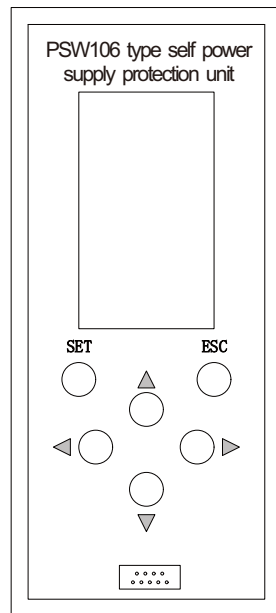
Technical data >>>

Rated power	50/60Hz
Secondary current	1A/5A
Heat load capacity (ContainingCT)	Long-term 2.5×In Short-term 1s 25kA 3s 20kA
Powe	0.5VA
Limiting power consumption	2VA
Power frequency withstand voltage	2kV/1min
Impulse withstand voltage	5kV
Working temperature	-20°C ~ 55 °C
Storage temperature	-40°C ~ 70 °C
Time accuracy	Time limit: 3% or ±10ms Anti time limit: depending on the current level and the choice of characteristics, Absolute value ±10ms
Current accuracy	5%
Trip output energy	> 10WS
External power supply voltage	220VAC±20%
primary rated current	1 ~ 9999A
Protection parameter settings	LCD or serial port
Electromagnetic compatibility	The same to PSW102
Insulation property	The same to PSW102
Mechanical properties	The same to PSW102
Environmental test	The same to PSW102

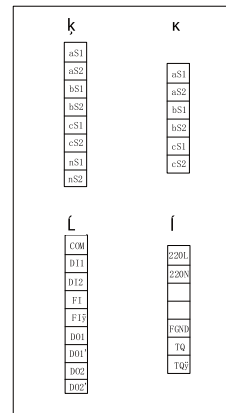
Wiring diagram >>>



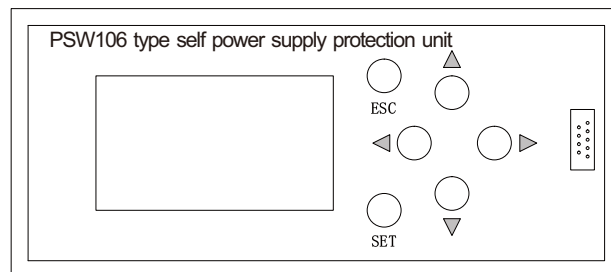
Case size: 138 (high) *68 (wide) *170 (deep)



Front panel layout (vertical installation)



Rear panel terminal layout



Front panel layout (horizontal installation)