

Shunt



Model No.

KBY - 
①

① Size

1	1A~50A	4	400A~1500A
2	60A~150A	5	2000A~4000A
3	200A~300A	6	5000A~10000A



How to order

Example) KBY-1 30A/50mV 1.0
KBY-3 300A/50mV 1.0

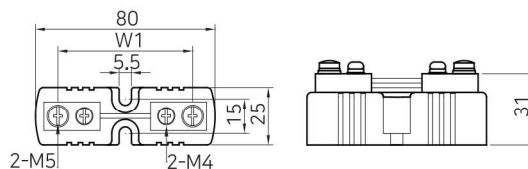


Customized product can be produced by order.

Specification

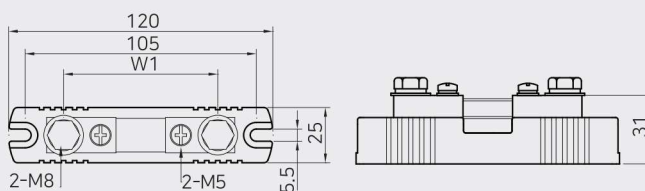
Type	Primary current	Weight(kg)	Rated voltage drop (Output)	Class	Insulation resistance	Withstand voltage
KBY-1	1A ~ 50A	100g	50.0mV or 60.0mV	1.0 0.5	10MΩ	2kV/1 min
KBY-2	60A ~ 150A	0.18kg				
KBY-3	200A ~ 300A	0.20kg				
KBY-4	400A ~ 600A	0.48kg				
	750A ~ 1000A	0.80kg				
KBY-5	1200A ~ 1500A	1.20kg			N/A	N/A
	2000A	1.66kg				
	2500A	2.20kg				
	3000A	2.80kg				
KBY-6	4000A	3.40kg				
	5000A	7.50kg				
	6000A	9.00kg				
	7000A	10.5kg				
	8000A	12.0kg				
	9000A	13.5kg				
	10000A	15.0kg				

KBY-1



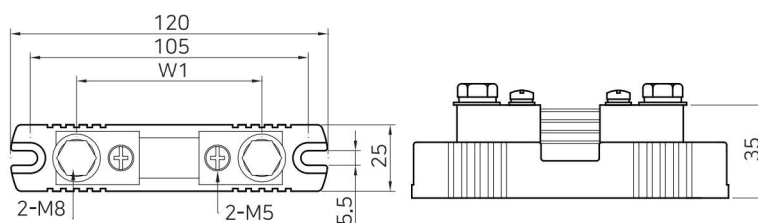
	50mV	60mV
W1	60±1.0	64.5±1.0

KBY-2



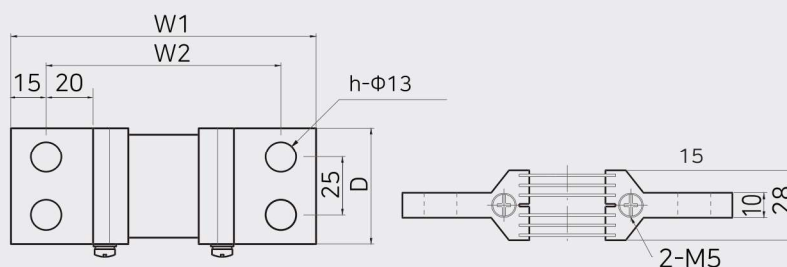
	50mV	60mV
W1	70±1.0	74.5±1.0

KBY-3



	50mV	60mV
W1	70±1.0	74.5±1.0

KBY-4



	50mV	60mV		400A~600A	750A~1000A	1200A~1500A
W1	130±1.5	136±1.5	D	30	50	75
W2	100±1.5	106±1.5	h	2-φ13	4-φ13	6-φ13

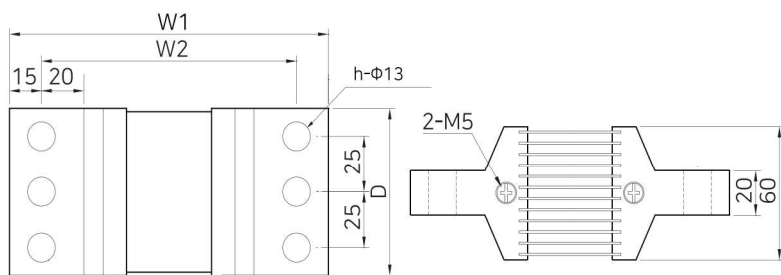
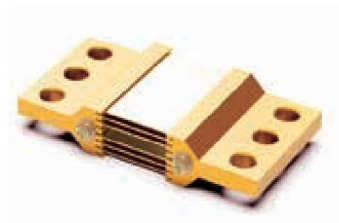
Drawing

Unit:mm

TYPE

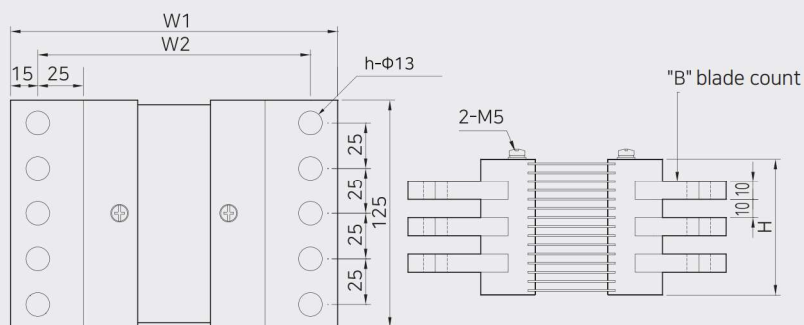
Dimension

KBY-5



	50mV	60mV		2000A	2500A	3000A	4000A
W1	150±1.5	158±1.5	D	75	100	100	125
W2	120±1.5	128±1.5	h	6-φ13	8-φ13	8-φ13	10-φ13

KBY-6



	50mV	60mV		5000A	6000A	7000A	8000A	9000A	10000A
W1	180±2	188±2	H	70	85	100	115	125	140
W2	150±2	158±2	B	3	3	4	5	5	6
			h	30-φ13	30-φ13	40-φ13	50-φ13	50-φ13	60-φ13

Voltage drop table for 100 meter length(Unit: V)

Current(A) Sectional area(mm ²)	100	200	300	400	500	600	700	800	900
100	1.83	3.66	5.49	7.32	9.15	11.0	12.8	14.6	16.5
200	0.92	1.83	2.75	3.66	4.58	5.49	6.41	7.32	8.24
300	0.61	1.22	1.83	2.44	3.05	3.66	4.27	4.88	5.49
400	0.46	0.92	1.37	1.83	2.29	2.75	3.20	3.66	4.12
500	0.37	0.73	1.10	1.46	1.83	2.20	2.56	2.93	3.29
600	0.31	0.61	0.92	1.22	1.53	1.83	2.14	2.44	2.75
700	0.26	0.52	0.78	1.05	1.31	1.57	1.83	2.09	2.35
800	0.22	0.46	0.69	0.92	1.14	1.37	1.60	1.83	2.06
900	0.20	0.41	0.61	0.81	1.02	1.22	1.42	1.63	1.83

Usage guide

Shunt to be connected in parallel with the DC measuring instrument, and marked with rated current, rated voltage drop, grade, serial number and manufacturer name.

The rated current means the measured maximum current. The rated drop is the voltage drop across the output terminal when the maximum current is passed. And the rated current varies depending on the measuring instrument and usually 50mV or 60mV.

The class of Shunt is classified at 0.5 or 1.0% at an allowable limit value through 80% of the rated current for 15 minutes.

Design standard

Temperature rise

Shunt generates heat proportional to the square value of the current.

For example, if the product is 1000 A / 50 mV, it generates 50 W when 1000 A is energized and 12.5W when the current used is 500A.

In order to protect other equipments from heat, it is recommended to apart from devices and use a ventilator.

Rated current and actual usage

Shunt was designed to be used at 2/3 of rated current, or will be over the error limit.

If the temperature of Shunt exceeds 150 ° C, the resistance value is over the error limit.

In order to improve Shunt's accuracy and stability, the rated current and voltage drop value are indicated, and the temperature coefficient is $\pm 0.0001\%$ between 40 and 60°C

Operating time

Please select Shunt higher than the rated current under continuous current, and lower shunt can be selected under incontinuous current.

If you use Shunt to measure the current of a surge or pulse waveform, please contact us.

Installation

Appropriate Shunt by instrument class

Instrument class	Shunt class	Instrument class	Shunt class
0.2	0.1	1.5	0.5~1.0
0.5	0.2	2.5	1.0
1.0	0.5		

If Shunt is used for 600 V or more, it is recommended to use insulator.

The terminal part of the shunt is brass, the voltage drop part is a manganese alloy, and the connecting material is a lead alloy. When connecting the terminal part to the bus bar, tighten it with the specified bolt and do not apply force such as twisting, compression, expansion and contraction to the connection part.

Shunt to be installed by considering air flow to cool shunt generated heat. If natural air cooling is impossible, the air circulation device is necessary.

Bus bar section area to be designed by considering voltage drop and heat.

Shunt protection equipment is required for electric short circuit.

Torque to Tighten Shunt Terminal Bolts : M4 - 9.8~13.5 kgf · cm, M5 - 28.4~37.2kgf · cm, M6 - 47.1~63.7kgf · cm, M12 - 402~524kgf · cm