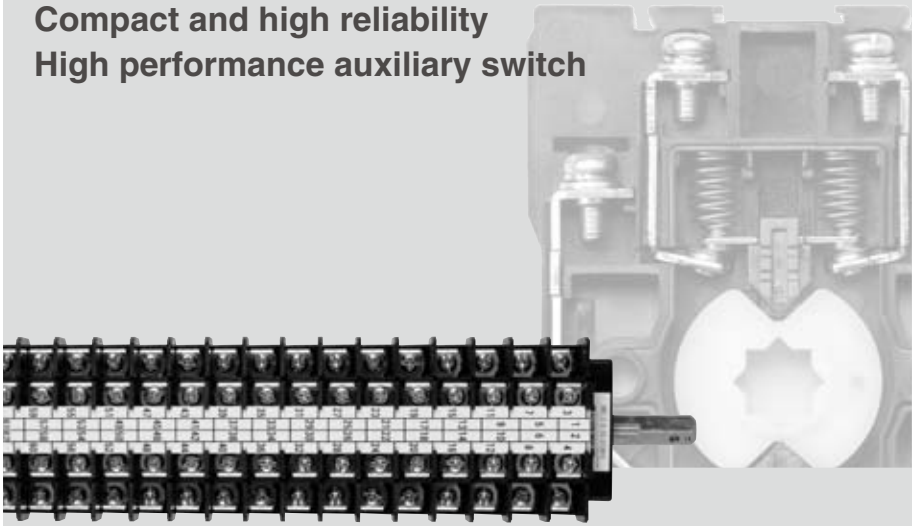
AUXILIARY SWITCH

GMZ TYPE

Compact and high reliability
High performance auxiliary switch



FEATURES

High dust resistance structure

By providing a rib structure for the units, it's ensure to raise an airtight and inprove high dust resistance. So that prevents foreign substance invasion.

Minute electric current application

Double bridge gold-plating contacts cover minute electric current application of DC5V, 1mA or more. Also double bridge silver-plating contacts cover DC5V 5mA. (50,000 cycle switching)

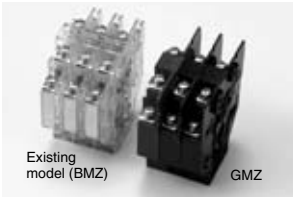
Wide contact variations

3 kinds of contacts, single silver-plating contacts, double bridge silver or gold-plating contacts that's a high contact reliability are available, which meets various usages.

Single silver-plating contacts | Double bridge silver-plating contacts | Double bridge gold-plating contacts

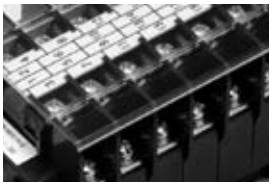
High anti-flammability

High anti-flammable PBT (Poly-Butylene Terephthalate) plastic is adopted. (class UL94,V-0)



Safety Structure on live portion

A terminal cover(Polycarbonate) is equipped as standard equipment for safety improvement.



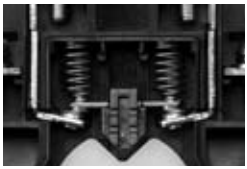
Combination of different contact units in one switch

Three different contact units can be assembled in one switch assembly.

* One switch unit can be provided with only one kind contact.

Chattering prevention

High-pressure springs on contact portion enhance vibration resistance performance.



Max. 20 unit assembly is available

Low twist structure of the switch enables to assemble long switches as many as 20 units (40 contacts). Wide range application such as parallel connection is available.

Max. wire size is 5.5mm²

Max. wire size is 2 to 5.5 mm^2 in spite of its small body.

Rated insulation voltage is 600V

The rated insulation voltage is higher than the previous model. (250V → 600V)

SPECIFICATIONS (RATING, PERFORMANCE / NORMAL SERVICE CONDITION)

Standard : IEC60947-1, IEC60947-5-1

Specification		GMZ	
Rating	Rated insulation voltage (Ui)	600V	
	Lighthing impulse	±6kV (1.2×50μs)	
	Rated current-carrying capacity (Ith)	20A (silver contacts), 2A (gold contacts)	
	Max. wire size	5.5mm²	
	Screw size	M4×9	
Performance	Withstand voltage	2,500V AC / 1min.	
	Contuct resistance	50mΩ or less (default)	
	Mechanical life	500,000 times (angular speed: 5π rad/s)	
	Electrical life	Single silver contacts	50,000 (110V DC 5A, L / R = 40ms)
		Double bridge silver contacts	100,000 (110V DC 5A, L / R = 40ms)
	Shock resistance	500m/s² or more (6 directions)	
	Vibration resistance	Frequency: 16.7Hz Amplitude: 3mm Time: 1 hour (3 axial directions)	
Normal service condition	Operating temperature	-20 to 60˚C	
	Relative humidity	45 to 85%	
	Altitude	2,000 m or less	

AUXILIARY SWITCH

GMZ TYPE

HOW TO ORDER

(1) Standard type coding

GMZ / 2S - 10 - S18U02 / ST 090 - S 9(1A1B)1AU1BU

① ②③ ④ ⑤ A B C D

No.	Item	Description	Remark
①	Basic type		
②	Fix bolt	1: M6 bolt X 2 pcs (front), 10mm	
		2: M6 bolt X 4 pcs (front and back), 10mm	
		3: M6 bolt X 2 pcs (front), 13mm	
		4: M6 bolt X 4 pcs (front and back), 13mm	
		5: M6 bolt X 2 pcs (front), 15mm	
		6: M6 bolt X 4 pcs (front and back), 15mm	
③	Shaft shape	S: Standard shaft 8mm (square)	Please see the "Shaft shape"
④	No. of units	2 to 20	
⑤	Contact type and No. of contacts	S□: Unit No. of single silver contacts	
		W□: Unit No. of double bridge silver contacts	
		U□: Unit No. of double bridge gold contacts	
A	Center position code	ex) ST: operation at the center of T position	Please see the "Operating position"
B	Operating angle	ex) 090: operation angle = 90°	
C	Contact ON angle	No code: Contact ON angle = 22°	Please see the "Contact ON angle"
		S: Contact ON angle = 19°	
D	Contact arrangement		Please see the "Contact arrangement"

(2) Special type coding

GMZ - 10 - 03X□□□-□

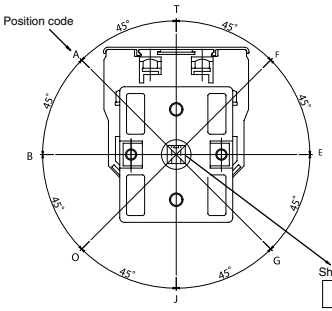
Standard type / No. of units / Specific No.

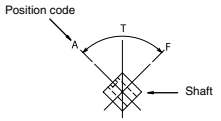
OPERATING POSITION

ST 090

Center position code / Operating angle

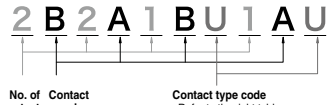
Front View
(Shaft sticking out side)





∗ A shaft point is center of operating position.
ex) code: ST090 (90°operation at T position as center)
Please informed that code "S" on initial in case central position is just on position code.
In case central position is between "A" and "T", please code "AT".

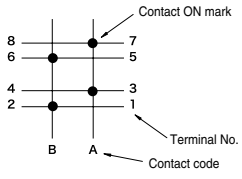
CONTACT ARRANGEMENT



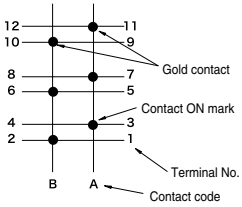
Code	Contact type
No code	Single silver contacts
W	Double bridge silver contacts
U	Double bridge gold contacts

∗Usually 1 case unit has 2 contacts, depending on their contact arrengement.
1 case unit can be provided with one kind of contacts.

ex) 2 (1B1A)

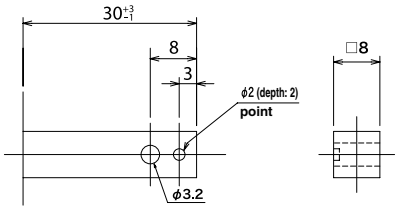


ex) 2 (1B1A) 1BU1AU

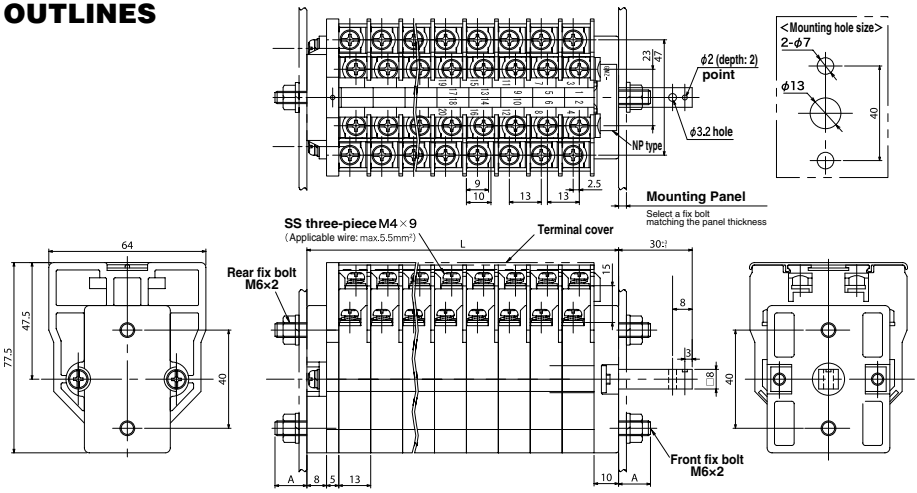


SHAFT SHAPE

Code: S



OUTLINES



No. of Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L (mm)	36	49	62	75	88	101	114	127	140	153	166	179	192	205	218	231	244	257	270	283

AUXILIARY SWITCH

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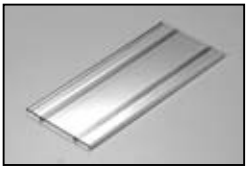
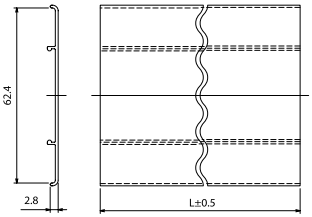
ACCESSORIES

TERMINAL COVER G-CV□P

(Order unit: 10)



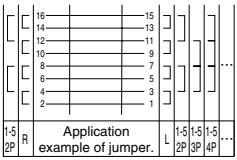
∗ Terminal cover is a standard accessory.

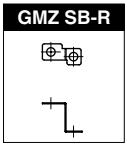


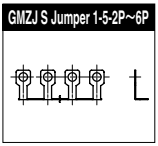
＜Dimentions＞

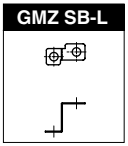
Unit No.	L (mm)	Unit No.	L (mm)
-	-	11	143
2	26	12	156
3	39	13	169
4	52	14	182
5	65	15	195
6	78	16	208
7	91	17	221
8	104	18	234
9	117	19	247
10	130	20	260

JUMPER



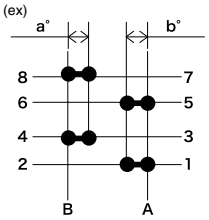






TECHNICAL DATA

CONTACT ON ANGLE



Type code	Angle a	Angle b	Allowance
No code	22°	22°	±3°
S	19°	19°	

∗ Contact ON angle may move left or right caused by a gap of shaft attachment or something. Please confirm the contact timing to be expected.

MAKE AND BREAK CAPACITY

[Switching load uner normal conditions]

Single, Double bridge Silver concacts

Load class	Make			Break		
	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)
AC-15	30	240	0.3	3	240	0.3
DC-13	0.55	250	300	0.55	250	300

Switching: 6,050 times

[Switching load uner abnormal conditions]

Single, Double bridge Silver concacts

Load class	Make			Break		
	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)
AC-15	30	264	0.3	30	264	0.3
DC-13	0.605	275	300	0.61	275	300

Switching: 10 times

ELECTRICAL DURABIRITY

Single, Double bridge Silver concacts

Load class	Make			Break		
	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)	Current (A)	Voltage (V)	Cosϕ $T_{0.95}$ (ms)
AC-15	30	240	0.7	3	240	0.3
DC-13	0.55	250	300	0.55	250	300

Angular rate: 2 π rad/s
Switching: 100,000 times (AC-15)
20,000 times (DC-13)
Frequency of switching: 360 times/h

Single, Double bridge Silver concacts

Test Voltage (V)	Test Current		Load type
	Make (A)	Break (A)	
AC240	50	5	Cosϕ=0.3
DC110	7	5	L/R=40ms

Angular rate: 3.6 π rad/s
Switching: 50,000 (Single contact)
100,000 (Double bridge contact)
Frequency of switching: 1,200 times/h

Double bridge Gold concacts

Test Voltage (V)	Test Current		Load type
	Make (A)	Break (A)	
AC24V	10	1	Resistance load
DC24V	0.7	0.5	

Angular rate: 3.6 π rad/s
Switching: 100,000 times
Frequency of switching: 1,200 times/h

AUXILIARY SWITCH

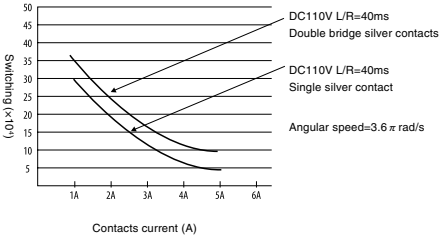
GMZ TYPE

RATED OPERATING VOLTAGE, CURRENT

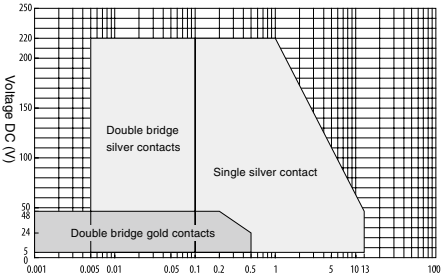
Rated operating voltage (V)	AC			DC		
	Rated operating current (A)			Rated operating current (A)		
	Inductive load COSϕ = 0.3 to 0.4		Resistance load	Inductive load L / R = 40ms		Resistance load
	Single silver contact S	Double bridge silver contact W	Double bridge gold contact U	Single silver contact S	Double bridge silver contact W	Double bridge gold contact U
24	—		1	—		0.5
48	—		—	13		—
110	10		—	5		—
220	—		—	1		—
240	5		—	—		—

REFERENCE

■Electrical durable curve



■Indication for choice of contact type (DC)



Single double bridge silver contacts =Inductive load (L/R=40ms)
Double bridge gold contacts =Resistance load

■Minimum applicable load

	Single silver contact S	Double bridge silver contact W	Double bridge gold contact U
Minimum applicable load (Reference)	5V DC 100mA or more	5V DC 5mA or more	5V DC 1mA or more