BALSEAL

SSR固态继电器
Solid State Relay

型号 BS/A/C/D/Z

使用说明书
（An instruction manual）

承蒙惠顾BALSEAL产品，在此谨致谢意。
为了确保安全且正确地使用本产品，使用前请务必仔细阅读本说明书并加以充分理解。
阅读后请妥善保管，以备随时参考.

-Thank you for your patronage of BALSEAL products.
-In order to ensure the safe and proper use of this product, please read the instructions carefully before using.The book is fully understood.Please keep it carefully after reading for reference at any time.

本说明书中只就主要注意事项进行了说明。
(Only the main points of attention are explained in this manual.)
详情请查看目录.
(Please refer to the catalogue for details.)

RoHS CE

安全注意事项 (Safety precautions)

● 警告标示的含义 (Meaning of warning signs)

warning
若使用不当，则可能会造成轻伤、中等程度伤害，有时甚至可能导致重伤或死亡。此外，还可能带来得大的经济损失。
If used improperly, it may cause minor injury, moderate injury, and sometimes even serious injury or death.In addition, it may bring huge economic losses.

warning
若使用不当，则可能会造成轻伤、中等程度或经济损失。
If used improperly, it may cause minor injury, moderate or economic loss.

● 警告标示 (warning label)

WARNING/警告

【设置】【Set up】
- 极少情况下可能会导致中度触电。
  Very few cases may cause moderate electric shock.
  请将散热器（或主机的散热板）进行接地。
  Please connect the radiator (or the heat dissipation plate of the host) to the ground.

WARNING/注意

【设置·环境】（Settings and environment）
- 极少情况下可能会导致轻度触电。请勿触碰通电中的BS型号系端子部（充电部）同时，请务必安装外壳后使用.
  -Very few cases may cause slight electric shock. Do not touch the BS type terminal part (charging section) in the power supply.Please install the case and use it.
- 若产生短路电流，BS型号则可能发生爆裂现象。为了防止发生短路事故，请务必在电源侧安装速断保险丝等保护器具.
  -If short-circuit current is generated, the burst of BS may occur. In order to prevent a short-circuit accident, please be sure to be in charge.Protection devices such as quick break fuse are installed on the source side.

【维护保养】（Maintenance）
- 极少情况下可能会导致轻度触电。切断电源后，请勿立即触碰BS型号的主电路端子。内置缓动电路内的电荷尚未完全释放.
  -Very few cases may cause slight electric shock. Do not touch the BS type main circuit terminal immediately after power is cut off.The charge in the built-in slow motion circuit has not yet been completely released.
- 由于可能会引起轻度的触电，因此配线时请务必切断电源。并且配线后请务必安装端子盖等装置。
  -Because it may cause slight electric shock, be sure to cut off the power supply when wiring. And install the terminal after wiring.Sub cap and other devices.

- 极少数情况下可能会导致轻度烧伤。接通或切断电源后，请勿立即触碰BS型号的主机及散热器。主机及散热器尚处于高温状态。
  -Very few cases may cause mild burns. Do not touch the BS model immediately after switching on or off the power supply.The radiator. The main engine and radiator are still in the state of quotient.

安全事项 (Security matters)

- 【关于运输】（About transportation）
  请避免在以下状态下进行输送，否则可能导致故障、错误操作或特性劣化。
  -Please avoid conveying under the following conditions, otherwise it may cause malfunction, wrong operation or characteristic deterioration.
- 溅上水或油的状态。（The state of splashing water or oil.）
- 温差大、会结露的状态（The state of large temperature and condensation.）
- 高温、高温状态（High temperature and high temperature）
- 尚未打包状态（Not packaged yet.）
- 【关于设置·保管环境】(About setting up and keeping environment)
  请避免在以下场所使用或保管，否则可能导致故障、错误操作或特性劣化。
  -Please avoid using or keeping in the following places, otherwise it may cause malfunction, erroneous operation or characteristic deterioration.
  - ▪有雨水、水滴的场所。（There are places where rain and water drop.）
  - ▪有水、油、药品等飞沫的场所（Places where water, oil, medicine and other droplets are present）
  - ▪高温、高湿的场所（High temperature, high humidity place）
  - ▪不得在环境温度超过-30℃~+100℃范围的场所保管。（It is forbidden to keep in the place where the ambient temperature exceeds -30 C ~+100 C.）
  - ▪不得在相对湿度超过40~85%RH范围的场所使用（It shall not be used in places where relative humidity exceeds 40~85%RH within the time limit.）
  - ▪有腐蚀性、易燃性气体的场所。（A place with corrosive and flammable gases.）
  - ▪灰尘、铁粉较多的场所。（Dust and iron more places.）
  - ▪日光直接照射的场所。（A place where sunlight is directly irradiated.）
  - ▪会对本体造成直接振动、冲击的场所。（A place that causes direct vibration and impact on the body.）

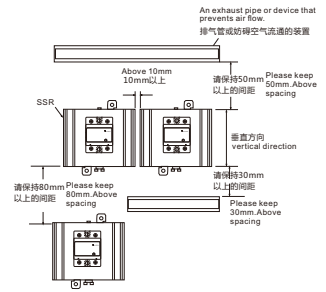
- 【关于设置·操作】(About setup and operation)
  -请勿妨碍BS型号主机、散热器周围的空气对流。主机的民常发热可能会导致输出单元发生短路故障或烧损。
  Please do not obstruct the convection of air around the BS model mainframe and radiator. The frequent heating of the main engine may cause short circuit fault or burnout of the output unit.
  -请勿使用沾染了油或金属粉末的手执行操作。否则可能会导致故障。
  Do not use hands contaminated with oil or metal powder. Otherwise, it may cause failure.
- 【关于设置·安装】(About setup and installation)
  -请按指定的方向安装。主机的异常发热可能会导致单元发生故障或烧损。
  Please install it in the specified direction. Abnormal heating of the main engine may cause unit failure or burnout.
  -请紧固BS主机的螺钉。请确保坚固扭矩在0.78~0.98N.m的范围。
  Please tighten the screws for the BS main engine. Please ensure that the solid torque is in the range of 0.78~0.98N.m.
  -自身发热会导致环境温度上升，请多加小心。尤其是控制盘内安装时。请安装可与外界充分进行空气流通的风扇.
  Self heating will lead to an increase in ambient temperature. Please be more careful. Especially when the control panel is installed. Please install adequate air circulation with the outside world.A fan.
  -在散热器及散热板上安装SSR时，请务必在安装接触面上涂抹散热专用硅脂。
  When installing SSR on radiator and cooling plate, be sure to apply special silicone grease on the contact surface.
  -直接安装于控制盘等时，面板材料请采用热电阴较少的铝制材料或铁板。木材等热电阻较高，被安装于易燃材料上时可能会因SSR的发热而导致起火、烧损.
  When directly installed on the control panel, the material of the panel should be aluminum or iron plate with less heat and shade. High thermal resistance of wood is installed in Yi.Burning materials may cause fire and burnout due to the heat of SSR.
  -安装散热器时，请注意不要夹入异物。否则可能因散热性降低而导致故障。
  When installing the radiator, please be careful not to include foreign objects. Otherwise, it may cause failure due to the decrease of heat dissipation.
  -请使用指定的散热器或具有同等以上性能的产品。主机的异常发热可能会导致输出单元发生短路故障或烧损
  The clothing uses the specified radiator or has the same above performance product. Abnormal heating of the main engine may cause short circuit fault or burnout of the output unit.
  -请紧固散热器的螺钉。请确保紧固扭矩在0.98~1.47N.m的范围。
  Please tighten the screws for the radiator. Please make sure that the tightening torque is in the range of 0.98~1.47N.m.
- 【关于设置·配线】(About setup and wiring)
  -请使用与负载电流相符的电线。电线的异常发热可能会导致烧损以及电线表层塑料套溶解发生短路。
  Please use wires that are in line with the load current. Abnormal heating of wires may cause burning and short circuiting of plastic sleeve dissolution.
  -请勿使用受损电线。否则可能导致触电、漏电。
  Do not use damaged wires. Otherwise, it may cause electric shock and electricity leakage.
  -请勿在与高压输电线相同配管、或风管中执行操作。否则可能会感应而导致错误操作、损坏。
  Do not operate in the same piping or transmission line with the high voltage transmission line. Otherwise, it may lead to incorrect operation and damage.
  -请选择适当长度的配线。由于电感可能导致误动作、故障、破损。
  Please choose the proper length of wiring. The inductor may cause malfunction, malfunction and breakage.
  -紧固端子螺钉时，请注意不要夹入非导体物质。端子的异常发热可能会导致烧损。
  When fastening screw, please be careful not to insert non conductor material.Abnormal heating of terminals may cause burnout.
  -请勿在端子螺钉松驰状态下使用。端子的异常发热可能会导致烧损。
  Do not use under the condition of terminal screw loosening. Abnormal heating of terminals may cause burnout.
  -通电电流在40V以上时，请使用与电线直径相应尺寸的M5的压接端子。否则可能会导致烧损或因被覆溶化而发生触电、漏电事故。
  If the current is above 40V, please use the crimping terminal with M5 of the wire diameter. Otherwise, it may cause burnout or melt due to coating.Electric shock and leakage accident occurred.
  -配线时请务必切断电源。有触电危险。
  Be sure to cut off the power supply when wiring. There is an electric shock.
- 【关于设置·使用】(About settings and usage)
  -请选择规定范围内的负载。否则可能导致错误操作、故障、烧损。
  Please select the load within the specified range. Otherwise, it may lead to wrong operation, malfunction and burnout.
  -请选择额定频率内的电源。否则可能会导致错误操作、故障、烧损。
  Please select the power supply at rated frequency. Otherwise, it may lead to wrong operation, malfunction and burnout.
  -为防止故障、烧损，请不要在各端子部施加额定以上的电压、电流。
  In order to prevent failures and burnout, do not apply rated voltage or current at each terminal.

使用注意事项 (Points for attention)

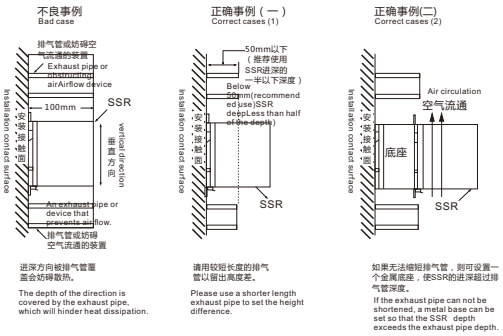
- 【关于输送】(About transportation)
  -在输送、设置产品时，请勿使用产品掉落或施加异常的振动或冲击力。否则可能导致产品特性劣化、错误操作或故障。
  When conveying or setting up products, do not use products to drop or exert unusual vibration or impact force. Otherwise, it may lead to deterioration of product characteristics and mistakes.Operation or failure.
- 【关于设置·安装】(About setup and installation)
  -将散热器安装至DIN轨道时，由于散热器较重，故请务必坚固轨道后在安装。两端请通过终端架进行固定。
  When the radiator is installed to the DIN rail, the radiator is heavier, so be sure to strengthen the track after installation. Both ends must be fixed through the terminal frame.
  -平面安装时，请通过负载电流-额定环境温度图表将负载电流降低30%。
  When installing the plane, please reduce the load current by 30% through the load current rated environmental temperature chart.
- 【关于设置·配线】(About setup and wiring)
  -请按以下规定的扭力值紧固端子。端子的异常发热可能会导致烧损。
  Please tighten the terminal according to the torque value specified below. Abnormal heating of terminals may cause burnout.
- 【关于设置·使用】(About settings and usage)
  -请勿对输入电路，输出电路施加过电压。否则可能导致故障及烧损。
  Do not apply overvoltage to the input and output circuits. Otherwise, it may cause failure and burnout.
  -请避免在以下状态下使用或保管，否则可能导致故障、错误操作或特性劣化。
  Avoid using or keeping it in the following conditions, or it may lead to failure, misoperation, or deterioration of features.
  -产生静电或干扰的场所。
  A place where static electricity or interference is generated.
  -产生强电场或强磁场的场所.
  A place that produces strong electric fields or strong magnetic fields.
  -可能被辐射的场所。
  Places that may be exposed to radiation.

<SSR的安装间隔（仅限控制盘内安装时）>

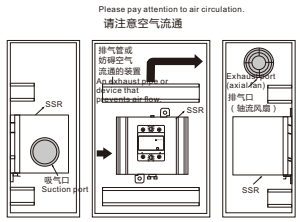
若控制盘为密封状态。则会导致SSR排出的热量无法散出，这样不仅会降低SSR的通电性能，还会影响其它电子元件的正常运行。使用时请务必在控制盘的上下部开设通风孔。若使用风扇效果更佳。
If the control panel is sealed. It will cause the heat discharged from SSR to be dispersed. This will not only reduce the energizing performance of SSR, but also affect it.The normal operation of other electronic components. When using, make sure that ventilation holes are placed on the upper and lower parts of the control panel. If you use the fan, the effect is better.



【SSR 与排气管的关系（排气管深度）】
Relationship between SSR and exhaust pipe (exhaust pipe depth)



【控制盘外围通风方法】
control panel ventilation method



●吸气口或排气口带有过滤器时，请注意定期清理乙方封口堵塞而导致效率低下。
When the suction or exhaust ports are equipped with filters, please pay attention to regularly cleaning up the blockage caused by Party B's sealing and causing inefficiency.
●请勿将可能导致吸气或排气故障的物品放置于吸气口或排气口内、外围区域。
Do not place objects that may cause suction or exhaust failure in the suction or exhaust port inside or outside the area.
●使用热交换器时，安装于SSR前面的位置更加有效。
The position installed in front of SSR is more effective when using the heat exchanger.

- 【关于SSR的环境温度】(About SSR's ambient temperature)
  -额定电流是指SSR环境温度为40℃时的值。
  Rated current refers to the value of SSR ambient temperature at 40 degrees centigrade.
  -SSR通过半导体来开关负载，控制盘内的温度也会因通电后散发的热量而升高。在控制盘内安装风扇对所有散热元件进行通风散热后，可降低SSR的环境温度并提高产品的可靠性。
  SSR switches the load on and off through semiconductors, and the temperature in the control panel also rises because of the heat emitted when the power is turned on. Install fan pairs in control panel.With heat dissipation, ventilation and heat dissipation can reduce the ambient temperature of SSR and improve the reliability of products.

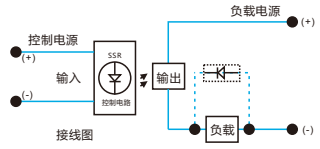
SSR的额定电流A Rated current A	5A	10A	20A	25A	40A	75A	90A
每台SSR的风扇数 Number of fans per	0.08台	0.16台	0.31台	0.4台	0.62台	1.20台	1.44台

-假：设有10台40A的SSR，0.62×10=6.2—— 需要7台风扇。
fake: SSR with 10 40A, 0.62 x 10=6.2 requires 7 fans.
-以风扇的大小：92mm×92mm、风量：0.7m³/min、控制盘环境温度30度来计算
Calculate the fan size: 92mm * 92mm, air volume: 0.7m3/min, control panel ambient temperature 30 degrees.
-同一控制柜内的其它机种散发的热量需要通过其它途径散热。
The heat emitted from other machines in the same control cabinet needs to be dissipated by other means.

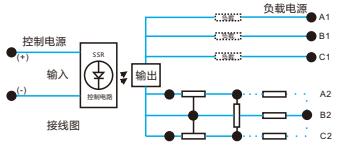
- 【关于EN标准】（Operation of EN standard）

-En标准通过以下条件取得。
The -En standard is obtained through the following conditions.
-使用了BS系列的产品装置上需要EN时，必须执行以下操作。
when BS series products are required for EN, the following operations must be performed.
-请将电容器连接至输入电源。
Please connect the capacitor to the input power supply.
-请将电容器和压敏电阻连接至负载电源。
Please connect the capacitor and varistor to the load power supply.
-请在3m以内连接输入侧电线。
Please connect the input side wires within 3M.

-单相 output型固态继电器
single phase output solid state relay



-三相AC output型固态继电器
Three phase AC output solid state relay



-若同时使用多个DIN轨道，每个DIN轨道上都要装好PE端子台。
If you use multiple DIN orbitals at the same time, you must install the PE terminal on each DIN track.

- 【关于保险丝】（About fuse）
  -为了防止短路事故的发生，请在输出端子侧连接速断保险丝。请参照下表，使用同等或相同以上性能的保险丝
  to prevent the occurrence of short-circuit accident, connect the quick break fuse on the output terminal side. Please refer to the table below for the same or above.Energy fuse

-推荐保险丝容量

额定输出电流 Rated output current	适用SSR Apply SSR	保险丝 Fuse
5A	BSA、BSC	10A
10A	BSA、BSC	32A
20A	BSA、BSC	
25A	BSA、BSC	
40A	BSA、BSC	63A
75A	BSA、BSC	100A
90A	BSA、BSC	

使用的承诺事项 (Commitments for use)

-在下列场合使用时，请与本公司销售人员或代理商联系并进行规格书的确认。同时为确保安全，请在额定、性能上留有余地，将故障降低到最低程度。
Please contact our salesmen or agents and confirm the specifications when used in the following situations. At the same time, to ensure safety, pleaseLeave room for rating and performance to minimize faults.
-室外使用、具有潜在化学污染或电气防害用途，或产品目录，使用说明书等没有记载的条件和环境下使用
Conditions and environments not documented for outdoor use, potential chemical pollution or electrical hazard prevention purposes, or product catalogues, instructions, etc.
-原子能控制设备、燃烧设备、铁道、航空、车辆设备、医疗器械、娱乐器械、安全装置以及行政机关和需要符合行业规定的设备。
Atomic control equipment, combustion equipment, railway, aviation, vehicle equipment, medical equipment, entertainment equipment, safety equipment and administrative machineryGuan he needs equipment that meets the requirements of the industry.
-关系危及生命、财产的系统、机械、装置。
systems, machinery and devices that threaten life and property.
-瓦斯、水管、石化、电力供给系统以及24小时连续运转系统等高度信赖性必要设备。
Gas, water pipes, power supply systems and 24-hour continuous operation systems are highly reliable essential equipment.
-其它，以上场所的用途。
other uses of the above premises.
-以述只是适用条件一的部分。使用时请阅读本公司最新版的最佳综合产品目录.
To describe only part of the applicable conditions. Please read the latest comprehensive product catalog of our company when using.

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