



HOW TO SELECT JOYIN VARISTOR

- To identify the source and route of surge.
- To decide the connection method of varistor.
- To decide varistor voltage and max. clamping voltage.
- To decide surge current waveform by calculation from surge voltage and surge impedance.
- To check whether the withstanding surge current and surge life of varistor is sufficient or not.
- To check the variation of electric power of protected device.
- To check whether the max. energy and energy life of varistor is enough or not.
- To check the relation:
Max. withstanding voltage of protected device > Max. clamping voltage of varistor > The real clamping voltage occurred > Breakdown voltage of varistor > Operating voltage of protected device.
- To check whether the loss of capacitance of varistor in operating condition.
- To check whether the problem caused by excessive current of leakage.
- To check the connection method of varistor.
- To check the condition of varistor overload.
- To check any other problems by various operating conditions.
- To test and to verify by real practice.
- To check the connection of the grounding wire.

如何選用久尹壓敏電阻

- 確定突波的來源及其通路。
- 確定壓敏電阻的連接方式。
- 確定所需要的壓敏電壓及最高抑制電壓。
- 依突波電壓和突波阻抗計算出突波電流的波形。
- 檢查壓敏電阻的突波耐量和脈衝壽命是否足夠。
- 檢查受保護電子產品所使用電源的變動(穩定)程度。
- 檢查壓敏電阻的最大能量和能量壽命是否足夠。
- 檢查下列關係是否正確:
受保護電子產品之最高耐電壓 > 壓敏電阻之最高抑制電壓 > 真正產生之抑制電壓 > 壓敏電阻之崩潰電壓 > 受保護電子產品之工作電壓
- 檢查壓敏電阻於工作狀態下是否損失其電容值。
- 若出現問題先檢查是否漏電流太大之原因。
- 檢查壓敏電阻連接方式是否適當。
- 檢查壓敏電阻負荷是否過大。
- 檢查壓敏電阻於工作狀態下是否有其他任何問題。
- 受保護電子產品以實際操作來測試及確認所使用之壓敏電阻。
- 檢查接地線之連接狀況。

EXAMPLES OF APPLICATIONS

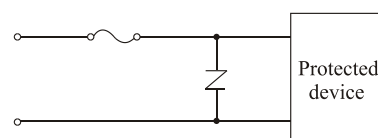
Varistor voltage selection in line circuit

Power supply voltage	Type
100V AC	JVR□□△201K JVR□□△221K JVR□□△241K JVR□□△271K
200V AC	JVR□□△391K JVR□□△431K JVR□□△471K
12V DC	JVR□□△220L
24V DC	JVR□□△390K

應用說明

Line Circuit

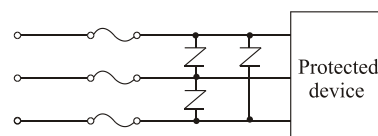
AC/DC single-phase circuit



Varistor voltage selection in line to ground circuit

Power supply voltage	Type
100V AC, 200V AC	JVR□□△431K JVR□□△471K JVR□□△751K to JVR□□△182K

AC three-phase circuit



□ : Element size (disc dia.)

△ : Series (N or S or U, see p.10)

**Varistor voltage selection in switching circuit protection**

Power supply voltage	Type
12V DC	JVR□□△220L
24V DC	JVR□□△390K
100V DC	JVR□□△151K
100V AC	JVR□□△201K JVR□□△241K JVR□□△221K JVR□□△271K

Varistor voltage selection in telecommunication circuit protection

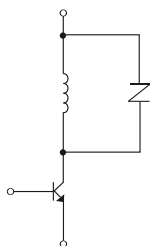
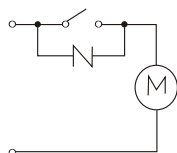
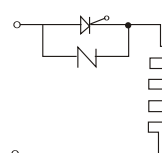
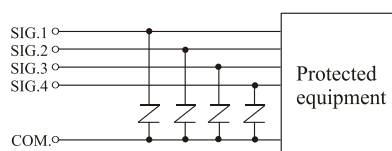
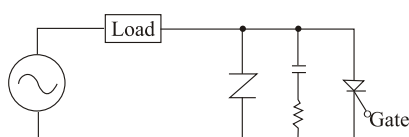
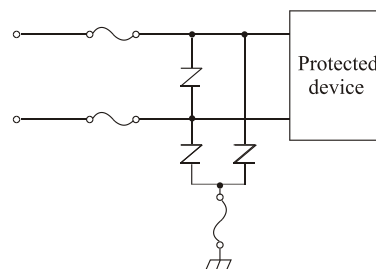
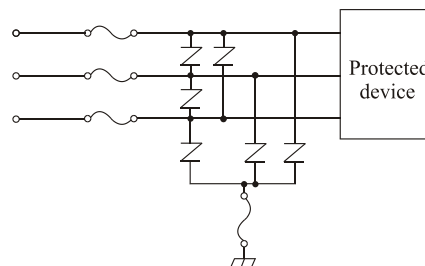
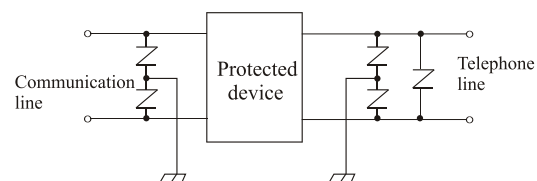
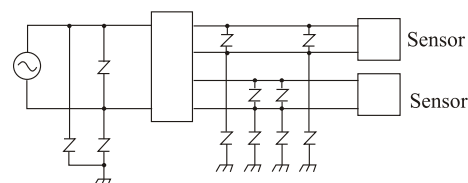
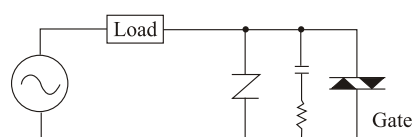
Power supply voltage	Type
12V DC	JVR□□△220L JVR□□△820K to JVR□□△182K
24V DC	JVR□□△390K JVR□□△820K to JVR□□△182K

□ : Element size (disc dia.)

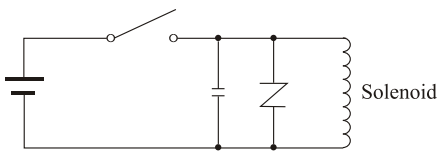
△ : Series (N or S or U, see p.10)

Fuse current selection if fuse being in series with varistor to protect from follow-on surge current after varistor damaged

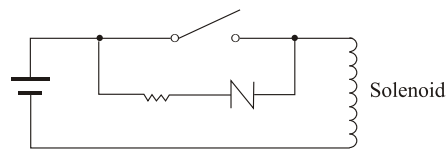
Varistor	5mm	7mm	10mm	14mm	20mm
Nominal fuse current	≤1A	≤3A	≤5A	≤10A	≤10A

Switching Circuit Protection**Relay protection****Spark elimination****Semiconductor protection****Surge protection of signal line****Thyristor protection****Line and Ground****AC/DC single-phase circuit****AC three-phase circuit****Telecommunication Circuit Protection****Fire alarm system****Triac protection**

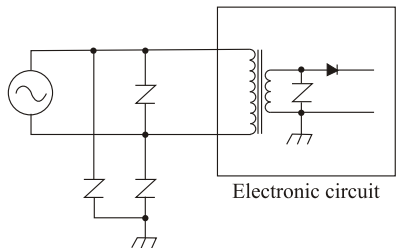
Solenoid



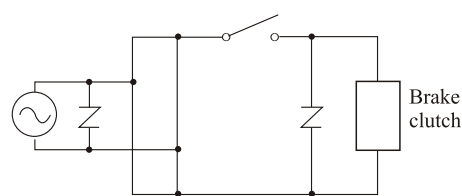
Pontact Protection



Stove & Boiler



Brake & Clutch



CHECK LIST IN SERIES AND PARALLEL OPERATION OF VARISTORS

Item	Series	Parallel
Objective	Higher voltage capability Higher energy capability (No Selection is required)	Higher current capability Higher energy capability (Selection is required)
Application Range	All voltages and currents.	All voltages-but for higher currents, i.e.,>100A
Models Applicable	All, must have same withstanding surge current ratings.	All models
Precautions	Withstanding surge current ratings must be equal.	Must be identical voltage rated models. Must test and select units for similar V-I characteristics.
Effect on Rating	The same current ratings with single unit. Voltage ratings additive. Energy ratings additive. Clamp voltages additive.	Current ratings function of current sharing. The same voltage ratings with single unit. Energy ratings as above in proportion to current sharing. Clamp voltages determined by composite V-I characteristic of matched units.

欲將多顆敏壓電阻器以串聯或並聯使用應確認的項目

項目	串聯	並聯
目的	較高電壓。 較高能量。 〈不須挑選〉	較大電流。 較高能量。 〈需要挑選〉
應用範圍	所有電壓及電流	所有電壓，但較大電流(>100A)
型號適用性	須有相同的額定突波耐量。	所有型號。
注意事項	額定突波耐量必須相同。	必須是單一額定電壓。 必須挑選類似的V-I特性。
對額定值的影響	須與單一元件額定電流相同。 額定電壓增加。 額定能量增加。 殘壓增加。	額定電流決定於電流分配方式。 須與單一元件額定電壓相同。 額定能量與電流分配成正比。 殘壓決定於合成之V-I曲線。