

# § PLUG-IN ARRESTER§

## DA series SIGNAL ARRESTERS (3-WIRE SIGNAL)

SIGNAL ARRESTER

DA - □



### Use

DA series are indoor installation type arresters that can absorb voltage of induced lightning surge caused on a signal line by lightning discharge, thus protects instrument.

### Features

- Besides small plug-in structure, the device has a structure that line does not open even if main body is pulled out of terminal block. This feature makes the device superior in conservativeness.
- Absorbs only surge without influencing measurement signals.

### Specification

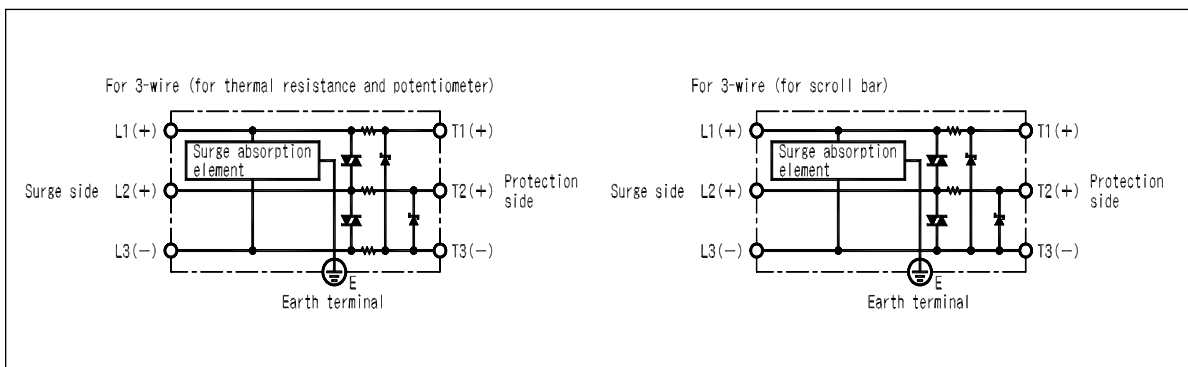
#### Common specification

Ambient temperature	-10~ + 55
Relative humidity	5-90%RH (no condensation)
Withstand voltage	Do not carry out a withstand voltage test. It may damage internal elements.
Earth	D type grounding (earth resistance 100 Ω) With connecting fitting for earth terminal
Structure	Small plug-in structure, material: fire retardant ABS resin (black)
Dimensions	W23.5×H100×D57mm
Mounting	Wall mounting
Weight	Approx. 120g

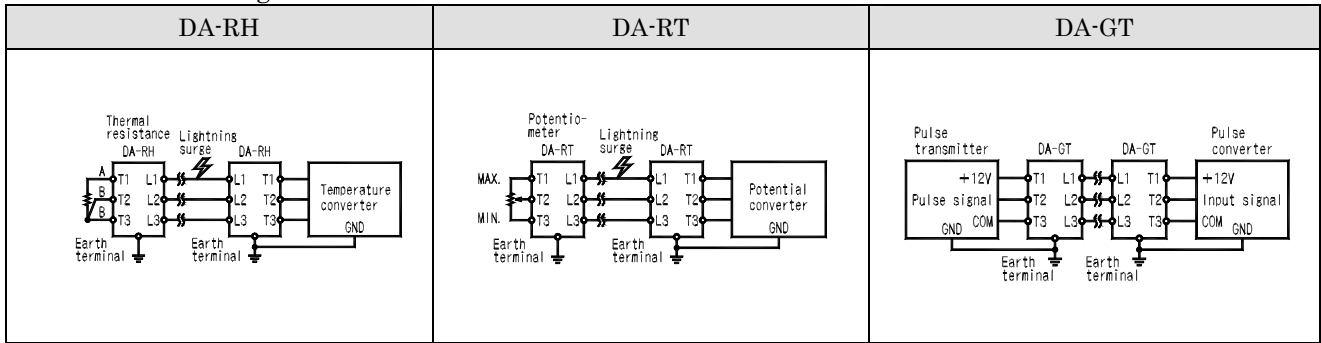
#### Individual specification

Type name		DA-RH	DA-RT	DA-GT
Signal		For thermal resistance	For potentiometer	For pulse
P e r f o r m a n c e	Spark over voltage	Line	3V	7.5V
		Earth	600V	600V
Clamping voltage (line)		16V	16V	30V
o u r c u r r e n t	Leakage current	Line	2 μA (at DC3V)	10 μA (at DC7.5V)
		Earth	2 μA (at DC140V)	10 μA (at DC140V)
Response time		0.1 μs	0.1 μs	0.1 μs
Discharge withstand current rating		1,000A (8/20μs)	1,000A (8/20μs)	1,000A (8/20μs)
Maximum load current		100mA	100mA	50mA
Internal series resistance		Approx. 10Ω±0.1% (30ppm/°C)	Approx. 10Ω±0.1% (30ppm/°C)	Approx. 10Ω
Maximum line voltage		DC3V	DC7.5V	DC14V

### Block diagram



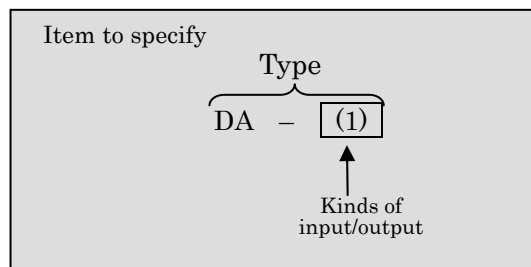
Connection diagram



Terminal arrangement

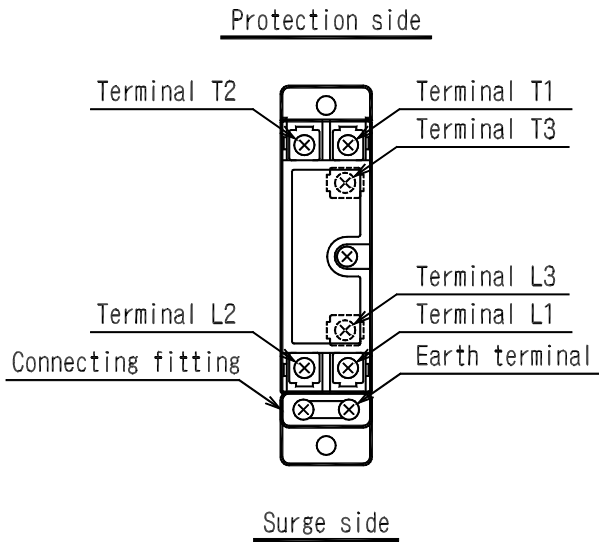
Terminal		Application	DA-RH	DA-RT	DA-GT
Protection side terminal	T <sub>1</sub>		A	MAX.	+12V
	T <sub>2</sub>		B	Slider	Pulse signal
	T <sub>3</sub>		B	MIN.	COM
Surge side terminal	L <sub>1</sub>		A	MAX.	+12V
	L <sub>2</sub>		B	Slider	Pulse signal
	L <sub>3</sub>		B	MIN.	COM

Purchase specifications



(1) Kinds of input/output

Signal	Kinds of input/output
RH	For thermal resistance
RT	For potentiometer
GT	For pulse



## § PLUG-IN ARRESTER §

## DA series SIGNAL ARRESTERS (2-WIRE SIGNAL)

SIGNAL ARRESTER

DA -



### Use

DA series are indoor installation type arresters that can absorb voltage of induced lightning surge caused on a signal line by lightning discharge, thus protects instrument.

### Features

- Besides small plug-in structure, the device has a structure that line does not open even if main body is pulled out of terminal block. This feature makes the device superior in conservativeness.
- Absorbs only surge without influencing measurement signals.

### Specification

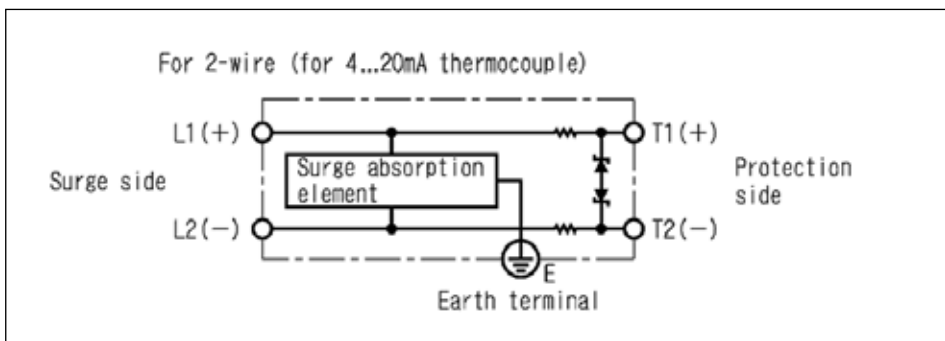
#### Common specification

Ambient temperature	-10~ + 55
Relative humidity	5-90%RH (no condensation)
Withstand voltage	Do not carry out a withstand voltage test. It may damage internal elements.
Earth	D type grounding (earth resistance 100 Ω) With connecting fitting for earth terminal
Structure	Small plug-in structure, material: fire retardant ABS resin (black)
Dimensions	W23.5×H100×D57mm
Mounting	Wall mounting
Weight	Approx. 120g

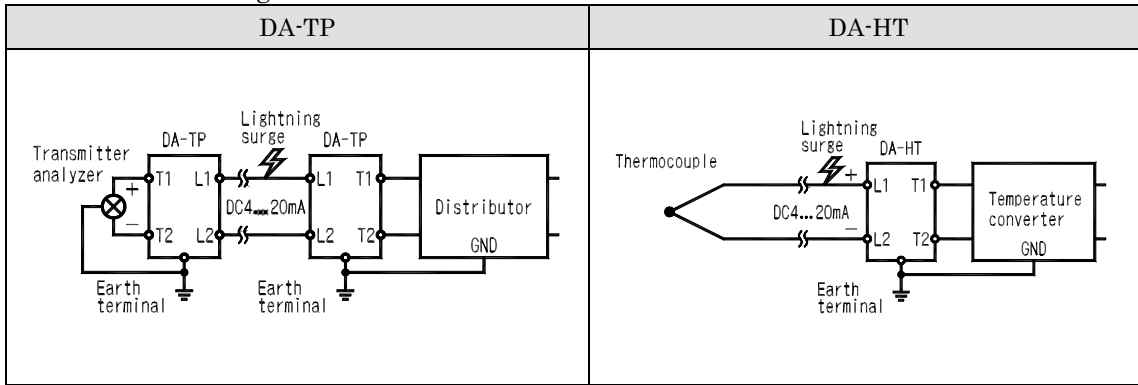
#### Individual specification

Type name		DA-TP	DA-HT	
Signal		For 4-20mA	For thermocouple	
P e r f o r m a n c e	Spark over voltage	Line	30V	7.5V
		Earth	600V	600V
	Clamping voltage (line)		40V	16V
r	Leakage current	Line	5 μA (at DC30V)	10 μA (at DC7.5V)
		Earth	5 μA (at DC140V)	10 μA (at DC140V)
	Response time		0.1 μs	0.1 μs
	Discharge withstand current rating		1,000A (8/20μs)	1,000A (8/20μs)
	Maximum load current		100mA	100mA
	Internal series resistance		Approx.20Ω (Outgoing and incoming, 2 lines)	Approx.20Ω (Outgoing and incoming, 2 lines)
	Maximum line voltage		DC30V	DC7.5V

### Block diagram



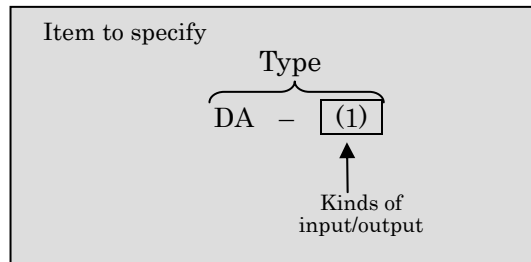
Connection diagram



Terminal arrangement

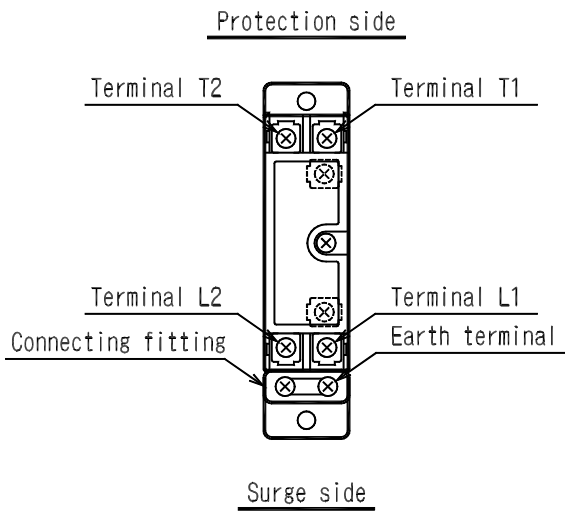
Terminal	Application	
	For 4-20mA signal	For thermocouple
Protection side terminal	T1	+
	T2	-
Surge side terminal	L1	+
	L2	-

Purchase specifications



(1) Kinds of input/output

Signal	Kinds of input/output
TP	For 4-20mA signal
HT	For thermocouple



## § PLUG-IN ARRESTER §

DA series

POWER ARRESTER

DA - 1

ARRESTER FOR LARGE-CURRENT POWER

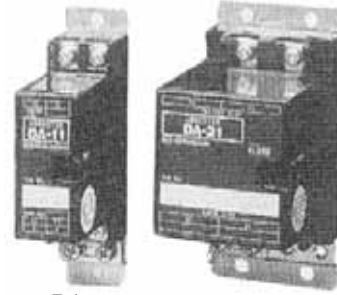
DA - 2

### Use

DA series are indoor installation type arresters that can absorb voltage of induced lightning surge caused on a signal line by lightning discharge, thus protects instrument.

### Features

- Besides small plug-in structure, the device has a structure that line does not open even if main body is pulled out of terminal block. This feature makes the device superior in conservativeness.
- Both DA - 1  and DA - 2  have a built-in fuse for line short fault protection. Especially, when a fuse burnt out, a window on the main body of DA - 2  turns white to indicate it.



DA-11

DA-21

### Specification

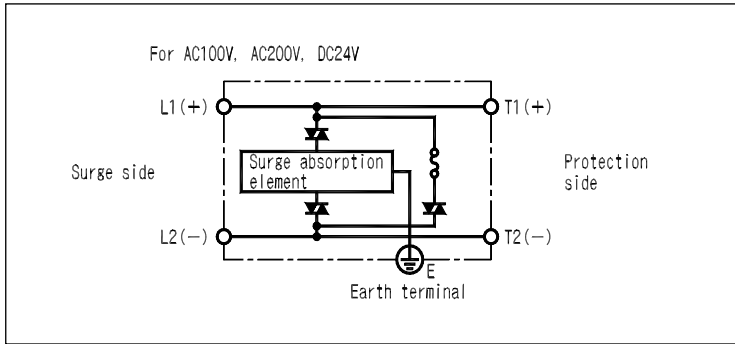
#### Common specification

Ambient temperature	-10- + 55
Relative humidity	5-90%RH (no condensation)
Withstand voltage	Do not carry out a withstand voltage test. It may damage internal elements.
Earth	D type grounding (earth resistance 100Ω) With connecting fitting for earth terminal
Structure	Small plug-in structure, material: fire retardant ABS resin (black)
Mounting	Wall mounting

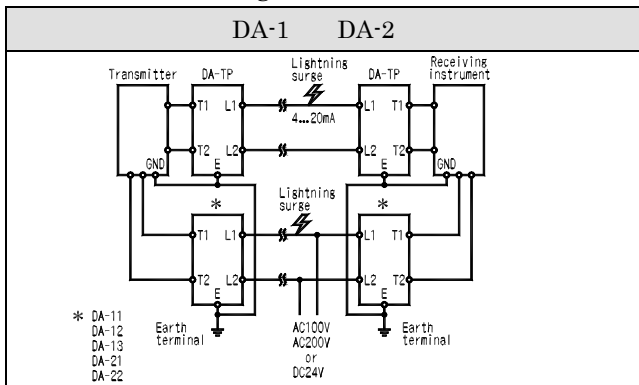
#### Individual specification

Type name		DA-11	DA-12	DA-13	DA-21	DA-22	
Power rating		For power source AC125V/DC180V	For power source AC250V	For power source DC30V	For power source AC125V/DC180V	For power source AC250V	
P e r f o r m a n c e	Spark over voltage	Line	240V	420V	74V	240V	420V
		Earth	420V	420V	74V	420V	420V
	Clamping voltage (line)	600V	1000V	250V	600V	1000V	
r	Leakage current	Line	1mA (at DC200V)	1mA (at DC400V)	10μA (at DC50V)	1mA (at DC200V)	1mA (at DC200V)
		Earth	1mA (at DC400V)	1mA (at DC400V)	10μA (at DC50V)	1mA (at DC400V)	1mA (at DC400V)
	Response time	0.1μs	0.1μs	0.1μs	0.1μs	0.1μs	
	Discharge withstand current rating	1,000A (8/20μs)	1,000A (8/20μs)	1,000A (8/20μs)	1,000A (8/20μs)	1,000A (8/20μs)	
	Maximum load current	AC3A/DC3A	AC3A/DC3A	DC3A	AC20A/DC20A	AC20A/DC20A	
	Allowable voltage of terminal	AC125V/DC180V	AC250V/DC360V	DC30V	AC125V/DC180V	AC250V/DC360V	

Block diagram



Connection diagram

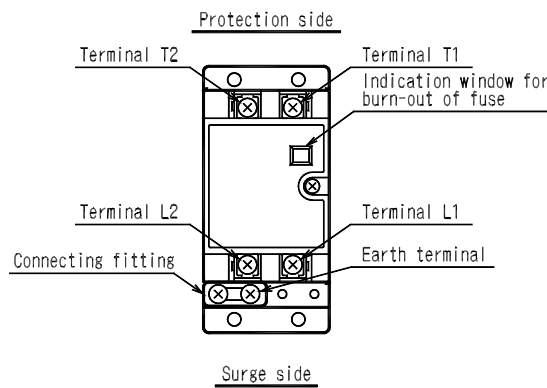
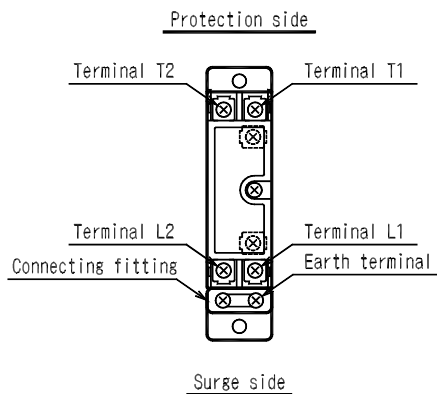


DA-1

DA-2

Terminal arrangement

Application		DA11,12,21,22	DA-13
Protection side terminal	T <sub>1</sub>	U	+
	T <sub>2</sub>	V	-
Surge side terminal	L <sub>1</sub>	U	+
	L <sub>2</sub>	V	-



Purchase specifications

Specifications	
DA-1 ← Kinds of rating voltage	DA-2 ← Kinds of rating voltage
Kinds of power rating	
Mark	Power rating
1	For power source AC125V/DC180V
2	For power source AC250V
3	For power source DC30V
Kinds of power rating	
Mark	Power rating
1	For power source AC125V/DC180V
2	For power source AC250V

POWER ARRESTER

AR-100, AR-200

Use

This device is an arrester that absorbs lightning surge penetrating from a commercial power line of instrumentation machinery. There are two kinds of them by power source voltage, AR-100 (for AC100/110V) and AR-200 (for AC200/220V). The device is designed to allow power source electricity of 50/60Hz to pass through it freely. A fuse (2A) is installed in power source circuit to protect the power source in case that a discharge element was destroyed by a lightning surge exceeding tolerance.

Plug in structure that makes maintenance/check easy. There is a power source indication lamp as well.

To use this device effectively, read the following items before handling it.



AR-200  
(79 × 50 × 121mm/300g)

Specifications

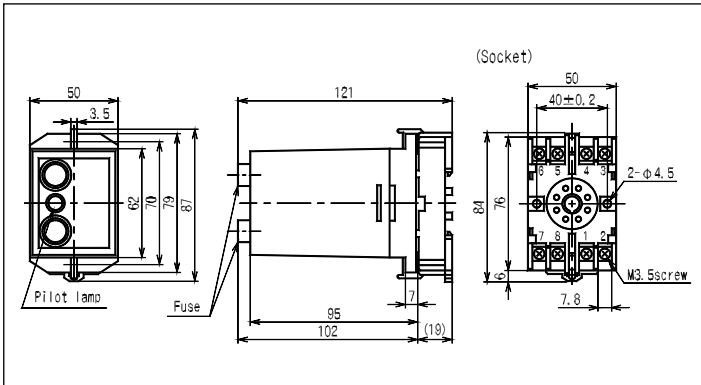
Performance

Type name		AR-100	AR-200
P e r f o r m a n c e	Spark over voltage	Line	190V (crest value)
		Earth	410V (crest value)
	Clamping voltage (line)	350V	700V
	Leakage current	Line	1mA (at DC150V)
		Earth	1mA (at DC300V)
	Response time	0.1μs	
	Discharge withstand current rating	1,000A (8/20μs)	
	Maximum load current	2A	
	Voltage drop	2V (50/60Hz)	
	Allowable voltage of terminal	AC100/110V	AC200/220V

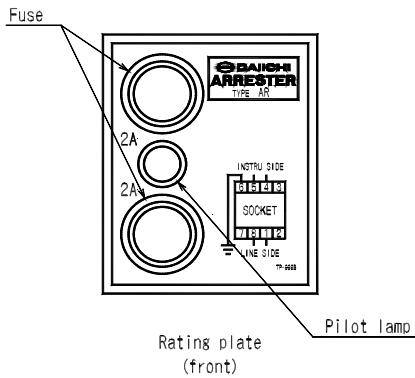
Specifications

Item	specifications
Structure	Plug-in structure
Connection method	8-M3.5 × 5 sems screw
Mounting	Wall mounting/Rail mounting (DIN standard 35mm rail)
Operating temperature & humidity range	-10- + 55 , 40-85%RH (no condensation)
Storage temperature range	-40- + 70
Appearance color	Munsell N1.5 (black)
Withstand voltage	A discharge element in the device may initiate a discharge and causes defective withstand voltage of the device if a withstand voltage test (MAX. 2,000V between electric circuit and earth) of the panel having the device installed in was carried out. So, when implementing a withstand voltage test, remove all earth wires jointed to terminals. (power source line should be cut out if the device was pulled out, and the voltage test could be considered as not being carried out.) * Make sure to reconnect the detached earth wire as before after withstand voltage test.

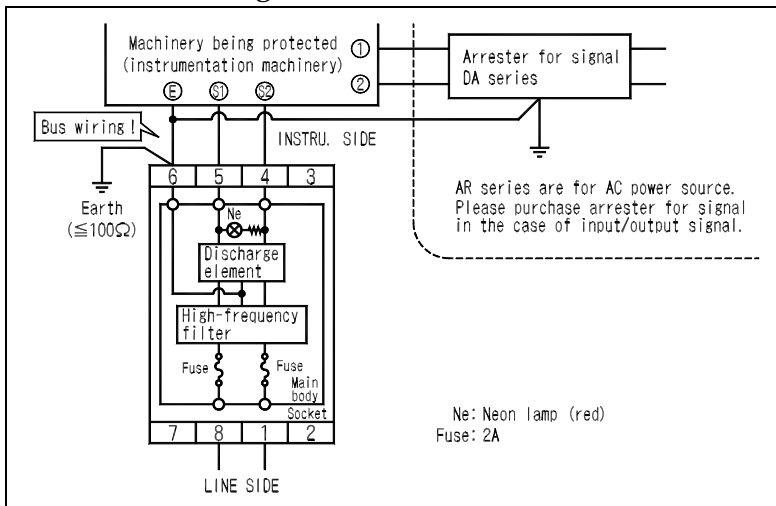
Block diagram



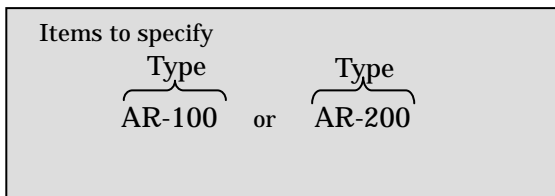
Name of each part



Connection diagram

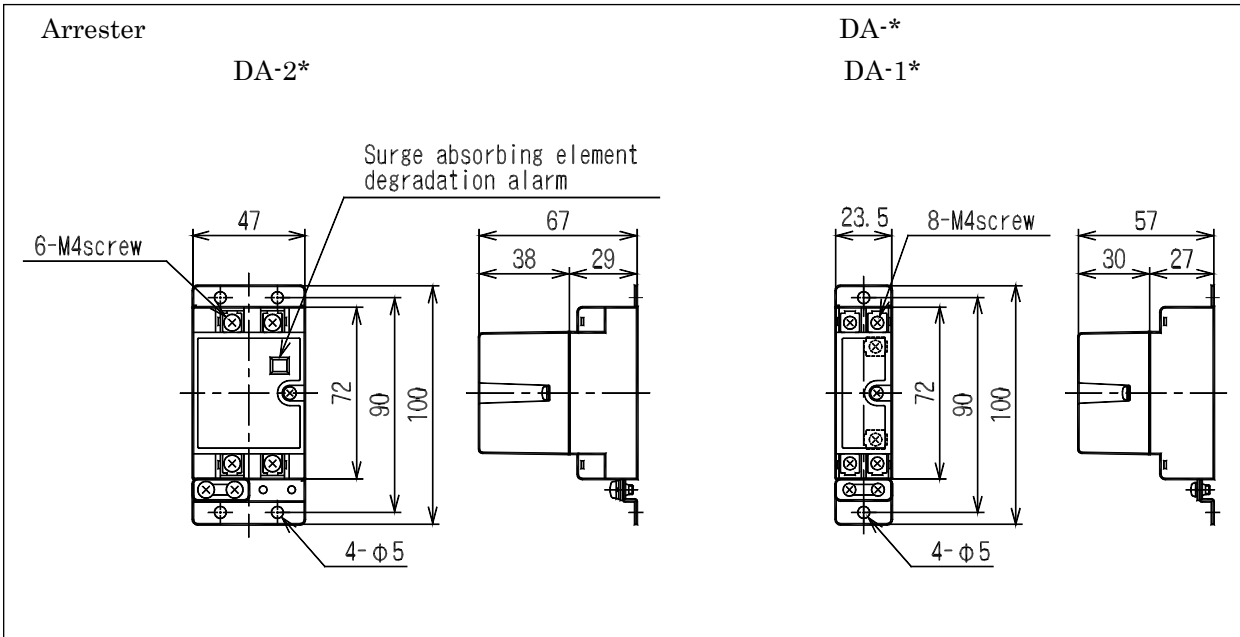


Purchase specifications





Dimensions (mm)



Multiple unit installation (mm)

