

**INSTALLATION AND MAINTENANCE MANUAL**

**JOSLYN P/N 1265-88**

**AC SURGE PROTECTOR**

**120/240 Vac, 1ø, CENTER GROUNDED**



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**Excellence in Systems Protection**

**TABLE OF CONTENTS**

Section	Title	Page
I.	Specifications .....	2
II.	Installation.....	3
III.	Theory of Operation .....	4
IV.	Maintenance .....	5
Figure 1	Dimensions .....	7
Figure 2	Connection Diagram .....	8

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**I. SPECIFICATIONS**

Joslyn P/N 1265-88  
AC Power Arrester

APPLICATION:	120/240 V AC, 1 $\phi$ , 3 Wire plus Ground, Grounded Split Phase
Voltage Rating Line-to-Neutral	120 V AC
Power Rating	Unlimited
Varistor Voltage, @ 1 mA DC, Line-to Neutral	240-300 V DC
Suppression Voltage, L-N	
@ 500 A, 100 kHz Ringwave	500 V
@ 500 A, 8/20 $\mu$ s	450 V
@ 3 kA, 8/20 $\mu$ s	480 V
@ 10 kA, 8/20 $\mu$ s	680 V
@ 20 kA, 8/20 $\mu$ s	1100 V
Minimum Life 10 kA, 8/20 $\mu$ sec Wave	2000 Operations
Maximum Surge Current	100kA (8/20 $\mu$ sec Wave)
Remote Monitoring Circuit	
Contact Rating 3 A @ 240 V AC	
	3 A @ 32 V DC
Operating Temperature Range	-40°C to +65°C
Maximum Operating Altitude	15,000 Feet
Power Consumption	Less Than 2.5 Watts

## II. INSTALLATION

Joslyn P/N 1265-88

AC Power Arrester

The Joslyn AC Power Arrester P/N 1265-88 is intended for installation on power systems of 120/240V AC, 50-60Hz, 3 wires plus ground, 1 phase, center neutral, unlimited kVA rating. The arrester was designed for installation in an Evergood Fabrication Company Catalogue Number PE1L-100 and 200 Series deadfront switchboard. It mounts below the main breakers.

Connections: Connect the two black wires to the connectors on the bottom of the main breaker.

Connect the two white Neutral wires to the nearest neutral buss.

Indicator Lights: The arrester is equipped with terminals, labeled "A", "B" and "C" for connecting lights to indicate the integrity of the fuses. Resistors with 30 k ohms are built in to allow the use of either neon or LED lights. Connect the neutral of both lights to the "C" terminal and the other lead of the first light to the "A" terminal and the other lead of the second light to the "B" terminal.

Remote Sensing Circuit: The terminal block on the lower end of the relay bracket, with terminals numbered 1, 2, 3, provides connections to the unpowered sensing relay contacts. If a closing of relay contacts is desired when a fuse opens, connect sensing wires to terminals 1 and 2. If an opening of relay contacts is desired when a fuse opens up, connect sensing wires to terminals 2 and 3. See Figure 2 for details.

### III. THEORY OF OPERATION

Joslyn P/N 1265-88

AC Power Arrester

The purpose of the Joslyn AC Power Arrester, P/N 1265-88, is to provide voltage clamping to neutral whenever instantaneous (surge) line-to-neutral voltage on any phase exceeds a level of approximately 300 volts peak. The protector responds in a fraction of a nano-second, and automatically restores itself to normal condition after termination of the surge condition. No power-follow occurs and the disturbance to the line voltage is minimal.

Each line of the arrester has two arrester modules with built-in fuses, and two monitoring circuits. Refer to connection diagram of Figure 2.

Each arrester module consists of several metal oxide varistors (MOV) in parallel. Each MOV has its own fuse. The fuse will blow before the maximum surge current rating of the MOV is exceeded. The fuses also help to balance the current distribution among the MOV's.

Each phase of the arrester has a monitoring circuit with a provision for an indicator light. When the arrester is in operating condition, the light is on. Each phase also has a relay connected to a terminal strip for connecting to external alarm circuits. Terminals 1 and 2 on the terminal strip provide connections to the open contacts of the relays of both lines in parallel. Terminals 2 and 3 provide connections to the closed contacts of the relays of both lines in series.

#### IV. MAINTENANCE

Joslyn P/N 1265-88

AC Power Arrester

The Joslyn AC Power Arrester, P/N 1265-88, requires no scheduled maintenance. There are no moving parts except the relay contacts in the monitoring circuit. There are no adjustments to make. Simple electrical tests will indicate the condition of the unit.

The lights and the remote alarm circuits are used to monitor the condition of the arrester. Proper operating conditions are indicated by the lights being on. If the lights are off or a remote alarm signal is obtained, one or a combination of the following conditions exists:

- a) The bulbs have burned out;
- b) The system voltage is off;
- c) Internal fuses in modules have opened;
- d) Resistors in the lamp circuit have opened;
- e) Relays are defective;
- f) The arrester is defective.

#### CAUTION

It is desirable to test the arrester with the power off.

If this is not practical, extreme caution must be observed when testing with power on. Hazardous voltages are present at the line terminals.

If one or more lights are off - -

1. Check the system voltage.
2. Replace the bulb if the fuse is intact and the system voltage is on.

If the system voltage is on, and the bulb has been replaced and is still not on, or a remote alarm signal is obtained:

1. Measure voltage between monitoring wire terminal (located on side of relay bracket) of corresponding phase (A or B) and neutral. Voltage must read same as supply voltage. If no voltage can be measured, both modules may be defective and should be replaced.
2. If modules are operational, the light is on, but a remote signal is obtained, replace the relay.
3. If light still is not on, a series limiting resistor for the light may be open. Check resistors for continuity and value.

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The following test will determine the condition of the arrester modules:

### Varistor Voltage Test

The Varistor voltage of the Arrester Modules may be tested as follows:

- a) Disconnect the black hot lead.
- b) Remove the relay and light bulb on the line to be tested.
- c) Use a suitable Surge Protector Test Set, such as Joslyn Model 4010, and connect test leads between the black lead and the neutral terminal. Operate Test Set in accordance with instructions and read the displayed value. This is the Varistor voltage value. Reverse leads and test again as above.

The following Varistor voltage values are considered acceptable:

- |   |                 |
|---|-----------------|
| 1. Factory specification for new Arrester | 240 to 300 V DC |
| 2. Arrester in Use                        | 230 to 310 V DC |
- Replace Arrester Modules if the Varistor Voltage is below 200V.

To replace an Arrester Module, proceed as follows:

- a) Disconnect the black lead.
- b) Disconnect monitoring lead of module to be removed from terminal block.
- c) Slide the plastic insulator up on the black wire and out of the way.
- d) Loosen 8-32 Nuts on top of arrester module. Remove both brackets.
- e) Remove 10-32 Screws from arrester module flange and chassis.
- f) Remove module.

To install a new Arrester Module the steps above are reversed.

Replaceable Parts:

1. Arrester Module: Joslyn P/N 1260-30
2. Relay: Omron MY2-AC120, Joslyn P/N 51512

Optional Equipment:

Joslyn Model 4010 Surge Protector Test Set

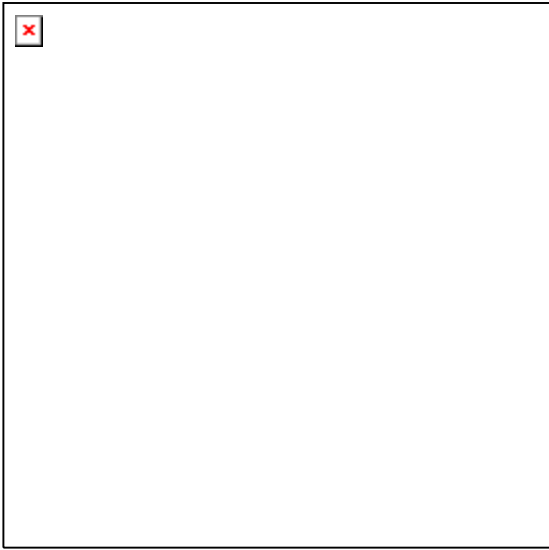


Figure 1

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