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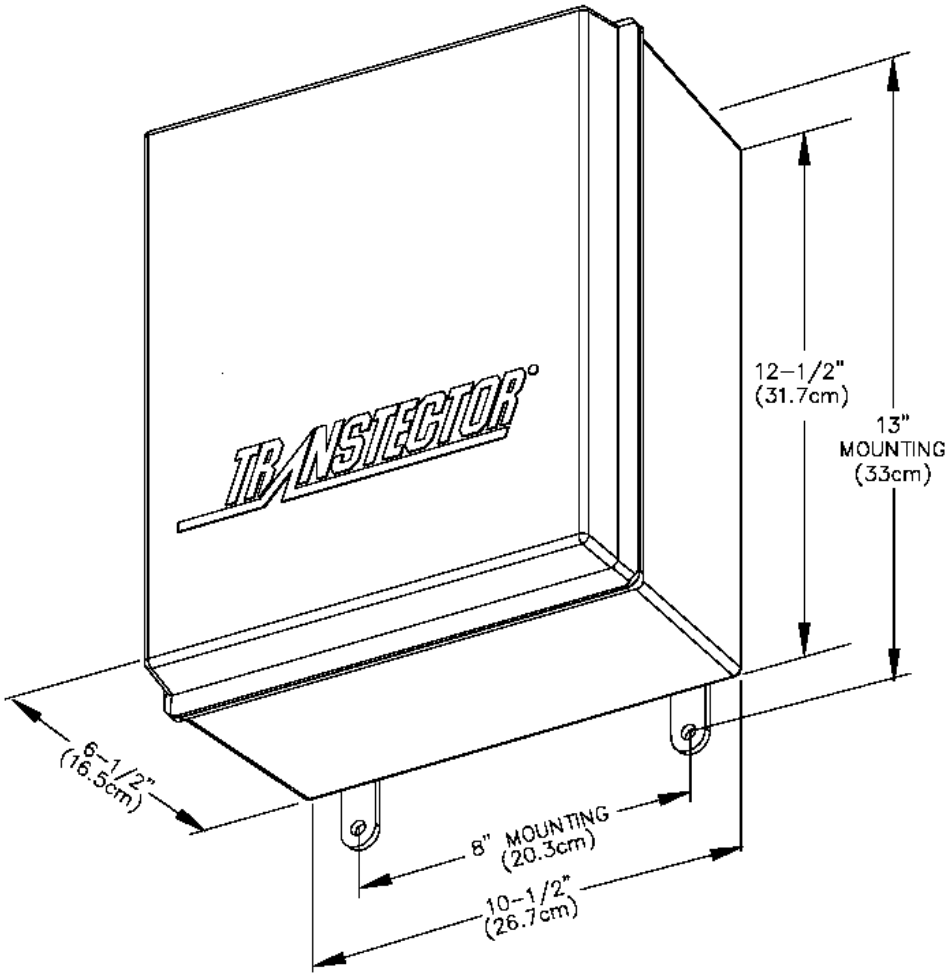
REVISIONS

LTR	DESCRIPTION	ECO NUM.	DATE	APPROVED
A	MARKETING RELEASE		9/3/04	-
B	PARAGRAPH 3.3, 4.0 & FIG. 1	5414	9/23/04	JDW
C	CHG FROM COMMON TO NORMAL SHT 2 SEC. 3.3	5707	4/20/05	MLH



UNLESS OTHERWISE SPECIFIED DIM. IN INCHES BEFORE PLATING

MATERIAL:

NOTED

DRAWN: MLH	DATE 08/25/04	
CHECKED: MW	9/23/04	
ENGR. APPD: MLH	9/23/04	
PROJ. APPD: JDW	9/23/04	
APPROVED:		

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TITLE: SPECIFICATION
MCP-120W SASD/MOV AC POWER OUTDOOR SURGE SUPPRESSION

SIZE	CAGE	DRAWING NUMBER	REV
A	30992	1400-539	C

SCALE = N/A

SURGE SUPPRESSOR MODEL: MCP-120W SASD/MOV OD, part number 1101-738

1. GENERAL DESCRIPTION: The MCP-120W SASD/MOV OD is a high-speed response, high current transient voltage surge suppressor designed to provide the best possible protection for electronic equipment on AC load centers and power distribution systems. The MCP suppression module is housed inside a pad lockable, non-metallic enclosure with a U.L. fire rating of 94-5V and a NEMA type 4X rating. The Enclosure features a clear window with Operational Status and Power Applied Status indicators visible through the front panel. The unit is provided with a Surge Counter module that detects transient activity within the sensitivity of the surge suppression elements. The MCP-120W SASD/MOV (see figure 2) utilizes robust silicon avalanche diode (SASD) technology coupled with high amperage metal oxide varistors (MOV) fabricated using Transtectors' unique surface mount construction, ASAT patent. Suppression is provided to protect each phase to neutral (Three Phase, Line to Neutral). The suppression circuit is engineered to provide the fastest, lowest voltage protection possible, along with high surge current endurance. By taking the numerous daily events, the SASD effectively prolongs the life of the MOV components by using less of their surge capability. Under conditions beyond those characterized by IEEE and IEC suggested test parameters, the SASD circuit continues to operate efficiently, with the MOV circuit conducting a higher percentage of what could be considered direct coupled lightning surge current. This prevents the SASD components from suffering damage and takes advantage of the brute force operation of the MOV's. This high strike level range endurance, offers the most consistent low voltage protection for sensitive electronics. The MCP-120W SASD/MOV is designed to meet UL1449 2nd Edition.

2. ELECTRICAL SERVICE:

- 2.1. Service Voltage ..... 120/208V Three Phase
- 2.2. Maximum Continuous Operating Voltage 160VRMS
- 2.3. Service Frequency 50/60Hz
- 2.4. Service Current (Max.) ..... 1000 Amp
- 2.5. Configuration ..... Four wire plus ground
- 2.6. Input Connection ..... Three Phase Wye, Hard Wired, Permanently Connected

3. ELECTRICAL PERFORMANCE:

- 3.1. Breakdown Voltage Threshold ..... Vbr ~ 230Vp @ 5mA
- 3.2. Voltage Protection Level testing per IEEEC62.41 and IEC 61643-1
  - 3.2.1.8/20μs Combination Wave ..... Vpl ~ 300V @ 500A 8/20μs
    ..... SVR = 330V per UL 1449
    ..... Vpl ~ 600V @ 10kA 8/20μs
    ..... Vpl ~ 950V @ 75kA 8/20μs
  - 3.2.2.10/1000μs Long Wave ..... Vpl ~ 700V @ 1.7kA 10/1000μs
- 3.3. Protection Mode ..... Normal Mode – Each Phase to Neutral, 10kA SASD – 100kA MOV
- 3.4. Response Time (Max.) ..... less than 1 ns
- 3.5. Energy Withstand
  - 3.5.1. SASD Primary Elements 500J
  - 3.5.2. MOV Secondary Elements 5000J

4. OPERATING/STORAGE TEMPERATURE ..... -40°C to +75°C

5. MECHANICAL:

5.1 Mechanical Size and Mounting: Refer to page 1 for size and mounting details.

5.2 Enclosure Description: The product is housed inside a pad lockable, fiber glass composite NEMA type 4X enclosure rated to U.L. 94-5V. The overall dimensions are 13"H x 10.5"W x 6.5"D (33cm x 26.7cm x 16.5cm).

5.3 Suppressor Case: The suppressor module is constructed inside a black Noryl N190 molded resin module rated to U.L. 94-V0.

5.4 Weight. The MCP-120W SASD/MOV OD enclosure system weighs 7.5lb (2.9kg).

6. PRODUCT INIDICATION:

6.1 Surge Counter: The unit is provided with a digital surge counter that triggers upon any power-line event within the threshold of the surge suppressor. The counter liquid crystal display is mounted with-in the NEMA 4X enclosure and shows through the door of the enclosure. The counter mechanism has a reset button that restarts the count to zero.

6.2 Visual Indication: The MCP-120W SASD/MOV is equipped with a Green LED to illuminate to show Suppressor Operational and a Yellow LED to illuminate with proper 3-phase power applied.

6.3 The unit is provided with remote annunciation to confirm proper electrical operation by the means of connecting to the isolated, dry contact relay positions at the top of the MCP-120W SASD/MOV. Refer to section 7.3 for details.

7. INSTALLATION:

7.1 Electrical Installation. The suppressor is intended to be installed as close as possible to the sensitive electronics and should be connected through a dedicated 60Amp (not less than 20A), two-pole circuit breaker with a fault current rating not less than 5kA AIC. The device should be installed on the "load" side of any transfer switch mechanisms. Refer to figure 1 for connection details.

7.2 Power Connection. The MCP-120W SASD/MOV is equipped with four #10AWG (2.95mm) wire leads for AC connection. The Neutral (White), L1 Phase (Black), L2 Phase (Red), and L3 Phase (Orange) line wires are each connected to a terminal block inside the NEMA 4X enclosure. The terminal block is sized for use with #1-AWG (2.95mm) wire.

7.3 Remote Annunciation Connection: The unit is provided with remote annunciation to confirm proper electrical operation by the means of connecting to the isolated, dry contact relay positions at the top of the MCP-120W SASD/MOV. Each suppression phase is monitored and the system is interlinked to provide a single point of contacts. The contact positions are labeled for a form C (Common, Normal Open, Normal Closed) type relay and the contacts can be wired for switching auxiliary circuits. The MCP120W SASD/MOV uses a removable 3-pin "euro" style plug with terminals sized for use with 18awg (1.2mm) wire.

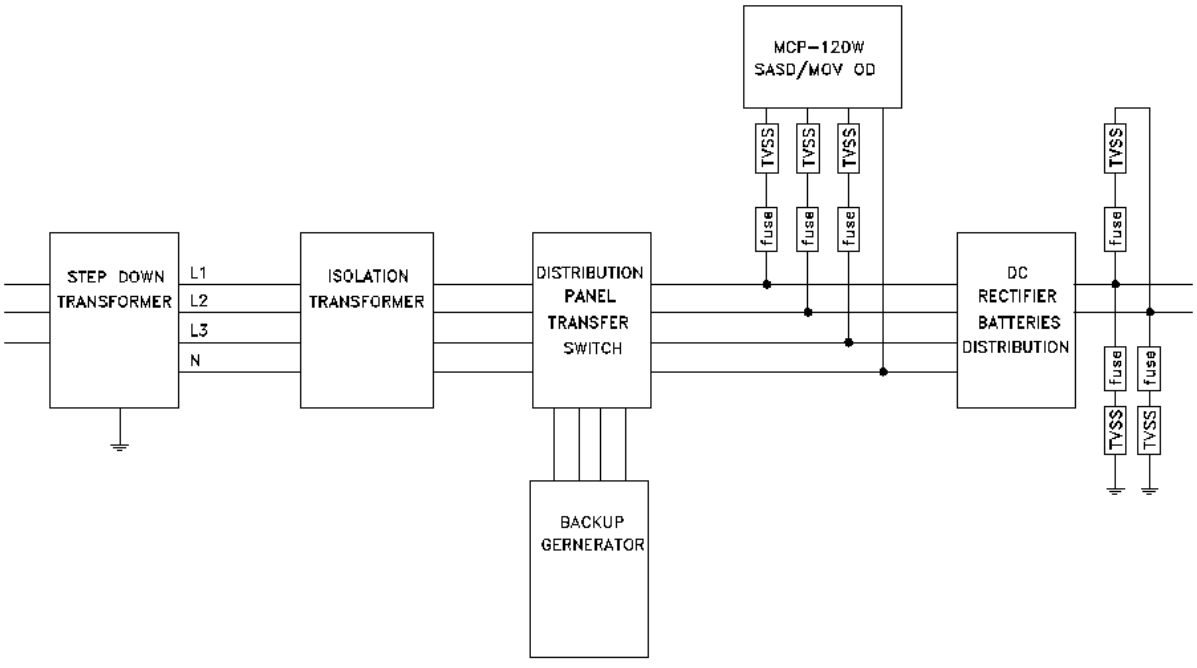

Figure 1

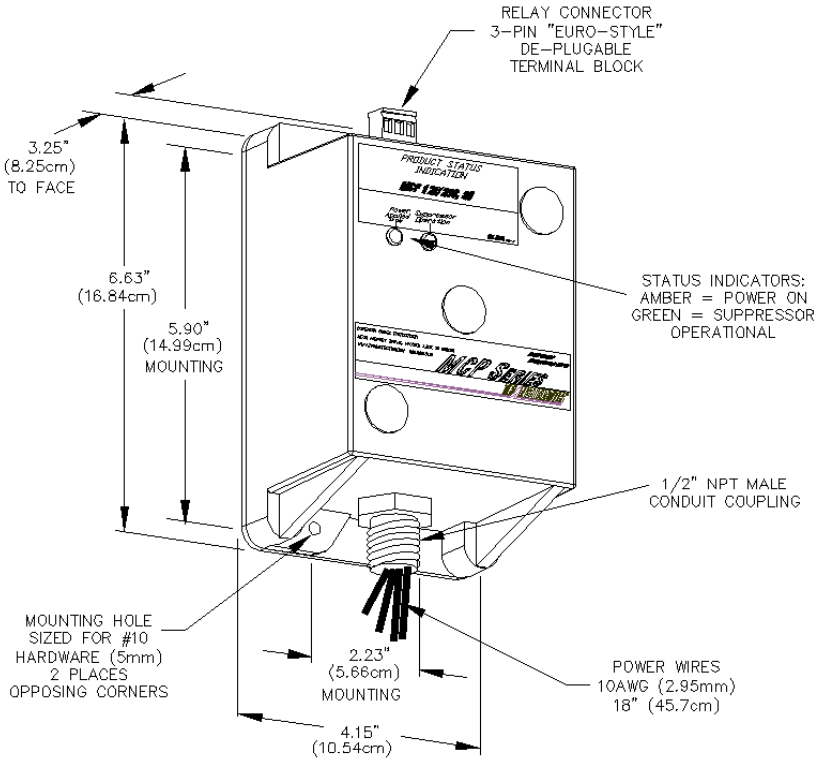

Figure 2

8 MAINTENANCE AND OPERATION:

8.1 Continuous voltage suppression and operation is provided while the electrical system is engaged and energized.

8.2 Maintenance is not required. The use of SASD surge elements as the primary surge element reduces the risk of degradation of the MOV backup surge elements.

8.3 Any change in surge protection status is indicated through the front window of the product. Visual Indication is provided with a Green LED to illuminate to show Suppressor Ready for transient events, and an Amber LED that illuminates to show power applied. The unit is provided with remote annunciation to confirm proper electrical operation by the means of connecting to the isolated, dry contact relay positions at the top of the MCP-120W SASD/MOV module inside the NEMA 4X enclosure. These contact positions may be remotely monitored for ease of site management.

8.4 In the unlikely event of self-sacrifice, the MCP surge module unit with in the NEMA 4X enclosure is easily replaced. The surge module is mounted to a panel assembly and all electrical connections are made to a terminal block with phase, neutral and ground identification. Be sure to de-energize all electrical AC power to the product for service.