Badger® Model A1017 and Model A1022	Surge Suppressor	Technical Brief

GENERAL DESCRIPTION:
Data Industrial Model A1017 and Model A1022 surge suppressors are hybrid devices employing gas-filled surge voltage protectors to handle large surge currents, and avalanche type silicon devices for extremely rapid response. Model A1017 is provided for outdoor use where exposure to standing water, rain, or spray is expected, and for indoor use where fluid splash, hosedown cleaning, or other exposure to fluids may occur. Model A1022 is only for use mounted within a NEMA 4, or better enclosure, or behind a watertight panel. Both suppressors are designed to protect the family of Data Industrial two (2)-wire flow sensors and their associated electronic instrumentation against substantial surge currents. The suppressors will protect against surges categorized by IEEE Specification 587, Category B (short branch circuits).

The LINE side of the suppressors are connected to the cable between the sensor and the electronic display or other device being protected. The LINE is the exposed, vulnerable part of the total system, and is typically the entry point of the surge.

The LOAD side of the surge suppressor is connected to the protected device.

The GROUND lead or terminal is connected to ground. The lead must be kept as short as possible and in no case should it exceed 12 inches in length. #12 wire, stranded is required. The GROUND lead must be connected to the power supply ground for instruments connected to external power sources, and to an adequate grounding rod at the sensor, as shown in the wiring diagrams. It is imperative that these wiring practices be carefully followed when grounding the suppressors or their effectiveness will be substantially reduced.

ELECTRICAL SPECIFICATIONS:
Clamping Voltage……..15V
Series Resistance…….2.4 Ohms

CONNECTIONS:
Model A1017 - Load Side……Red and Black 18 in. leads PVC insulated; Green (grounding) 12 in. PVC insulated

Line Side……..Red and Black 48 in. leads PVC insulated

Model A1022 - Load Side…….Screw Terminals, #6-32, one (1) for each two (2) connections to load, and one (1) connection to load ground

Line Side……..Screw Terminals, #6-32, two (2), one for each two (2) lines plus shield in transmitting cable

WIRING RECOMMENDATIONS:
IMPORTANT - BEFORE WIRING SUPPRESSORS, the installer must review the appropriate wiring diagram attached, to ensure that the suppressors are wired properly.

1. Review the wiring diagrams applicable to your installation.

2. Ensure that the suppressor is mounted in a location that permits making the GROUND connection of the suppressor directly to the ground reference for the instrument being protected:

(for Model A1017) without splicing extensions to the 12 inch flying leads
or
(for Model A1022) with a #12 stranded wire no longer than 12 inches (shorter is better)

3. Ensure that the sensor or instrument leads are connected to the LOAD side of the suppressor, and the interconnecting cable only is connected to LINE. Carefully observe the recommendations relating to shield (“bare”) wire connections.

4. DO NOT dress or bundle wiring on the LOAD side with that on the LINE side; avoid running the wire bundles in close proximity with each other to avoid flashover between conductors in the event of a high voltage surge. The surge suppressor can only protect against surges that enter the wiring system on the LINE side.

If the above instructions are carefully followed, the probability that the users system will be severely damaged or that data will be lost in the event of a nearby lighting strike will be significantly reduced. However, no guarantee can be given that the system or the data stored therein will survive every potential case of a nearby strike.

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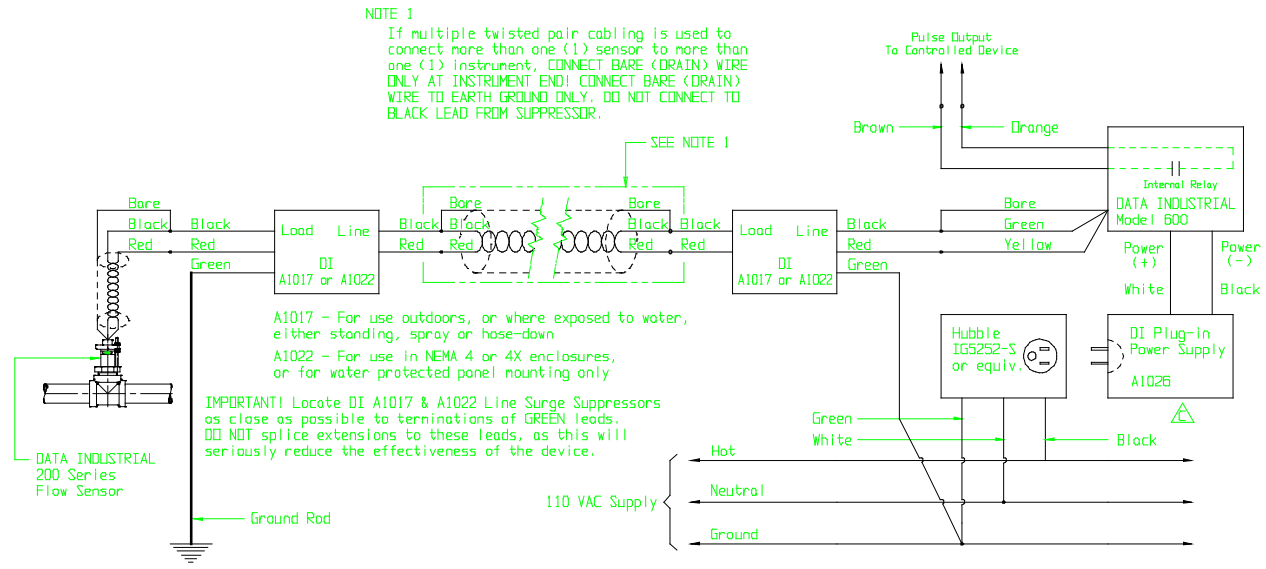
C	ECO 3532	2/2/98	R.G.

DATA INDUSTRIAL Model 600
With Line Surge Suppression
Using SINGLE SHIELDED TWISTER PAIR



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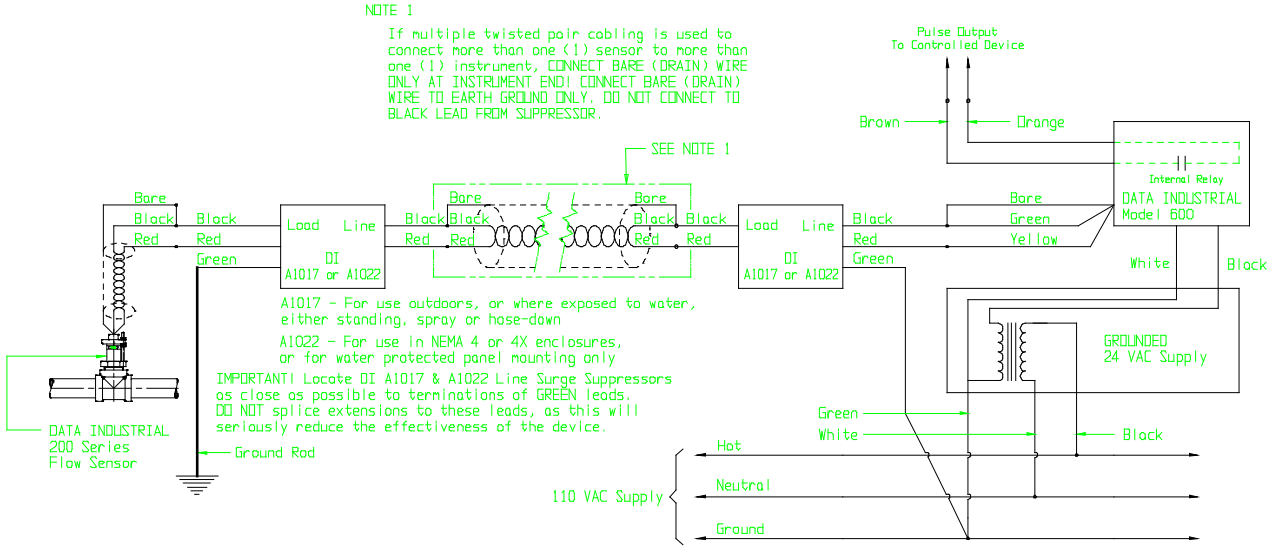
DATA INDUSTRIAL Model 600
With Line Surge Suppression
Using SINGLE SHIELDED TWISTED PAIR



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600LS

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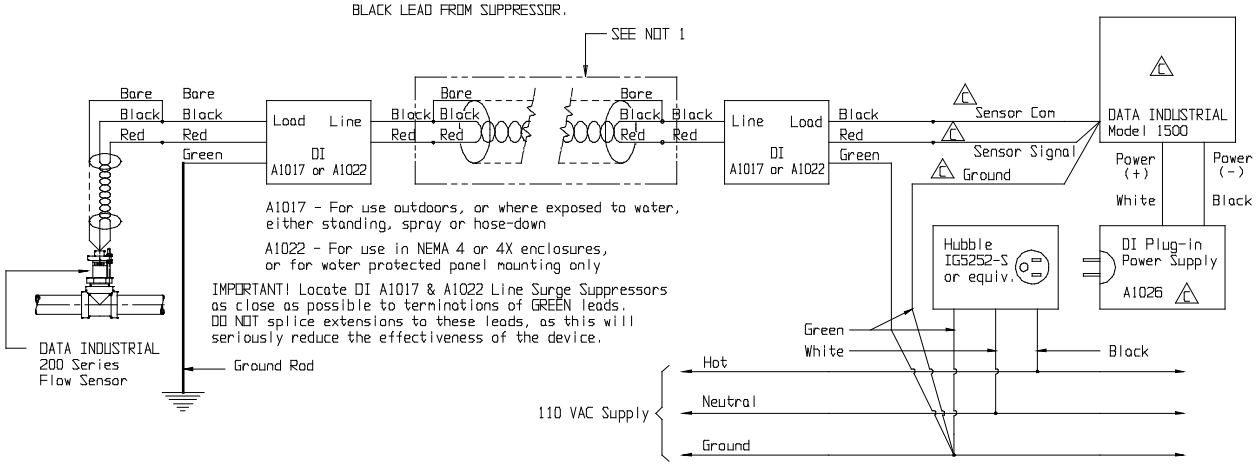
DATA INDUSTRIAL Model 1500 C
With Line Surge Suppression
Using SINGLE SHIELDED TWISTER PAIR

NOTE 1
If multiple twisted pair cabling is used to connect more than one (1) sensor to more than one (1) instrument, CONNECT BARE (DRAIN) WIRE ONLY AT INSTRUMENT END! CONNECT BARE (DRAIN) WIRE TO EARTH GROUND ONLY. DO NOT CONNECT TO BLACK LEAD FROM SUPPRESSOR.



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1500-LS

Data Industrial®

Please see our website at **www.badgermeter.com** for specific contacts.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.

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