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Computing devices and peripherals manufactured by D3 generate, use, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions in this manual may cause interference to radio communications. Such equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against radio interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense will be required to take whatever measures may be required to correct the interference.

Some components may not have been manufactured by D3. If not, D3 has been advised by the manufacturer of the component that the component has been tested and complies with the Class A computing device limits as described above.
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Introduction

Thank you for selecting a D3 solution for your hazardous area operator interface needs.

This manual reviews procedures for installing and operating D3 flat panel operator interface systems. In addition to the setup instructions and diagrams in this manual, D3 provides an overview of the methods used to ensure that electronic systems are safe for hazardous areas. This explains the theory behind the unique product and services provided by D3.

Should you have any inquiries or concerns, please contact D3.

Hazardous Area Safety Methods:

Theory of Operation

[What do Y Purge and X Purge protections have in common? Is there something that summarizes the significance of both protective devices in hazardous areas?]

Division 1: Y-Purge Protection

Y-purge systems are used for installing electrical equipment in Division 1 hazardous areas*. By installing a Y-purge on an enclosure in a Division 1 area, the rating inside of the enclosure can be reduced to a Division 2 classification. As a result, less costly Division 2 electronic equipment can be safely used in Division 1 areas.

A Y-purge system provides the protective purge and safe gas flow to the enclosure. This system is controlled by the operator, in place of the automatic control provided by X purge systems. To provide more alerts for the operator, the purge system includes alarm contacts, a visible indicator to alert the user and if applicable, an automated control system. This control system is important if pressure is lost within the enclosure, which may be caused by a failure of the protective safe gas flow or of enclosure integrity.

Prior standards required four volumes of air to be circulated through the enclosure. Now, the standards require that the volume of air passed through a given enclosure eliminate any possible flammable concentration of substances within the enclosure (the minimum of four volumes of exchange still applies).
Factory Mutual Class Number 3620 (section 4.2, page 5) states that when “concern exists that all compartments may not be purged, purging tests shall be conducted.” Thus, it is necessary to take into consideration the airflow, pressure, shape of the enclosure and effect of equipment installed within the enclosure.

*Please note that D3’s systems have been fully tested under the supervision of Factory Mutual to ensure compliance with the standards of FM 3620: 4.2, and include all of the features described above.*

*See National Electrical Code articles 500-504 and the NFPA 496, section 2-9.*

**Division 1: X-Purge Protection**

X-purge systems are used for installing electrical equipment in Division 1 hazardous areas. By installing an X-purge system on an enclosure in a Division 1 area, the area can then be considered a non-rated environment. As a result, normally rated equipment may be installed within the enclosure (within reasonable limits, such as complying with temperature and power restrictions).

An X-purge system is fully automated. The system not only provides the protective purge and maintains positive pressure, but it also automatically controls the connection and disconnection of power supplies and signal paths. A well-designed X-purge system also automatically controls flow rates, internal pressure regulation, purge timing, and switching of states between purge flow and normal operation.

*Please note that D3’s systems have been fully tested under the supervision of Factory Mutual to ensure compliance with the standards of FM 3620: 4.2, and include all of the features described above.*

**Division 2: Non-Incendive Protection**

The NEC defines a non-incendive circuit as “one other than field wiring, in which any arc or thermal effect produced under intended operating conditions of the equipment is not capable, under specified test conditions, of igniting the flammable gas-air, vapor-air or dust-air mixture.” Non-incendive circuit designs do not take component failure into consideration, and therefore have a reduced safety level compared to IS circuit design. They can be worked on while energized without a hot-work permit.

Non-incendive devices can be rated for Division 2 as well as Zone 2 areas without a purge control or other protective device.

*Please note that D3’s systems have been fully tested under the supervision of Factory Mutual to ensure compliance with the standards, and are approved as non-incendive devices for all Division 2 areas.*

*Part of the NEC definition of Division 2 areas.*

**Pre-Installation Testing**

Before installing your system in its final location, the system should be tested to verify that the purge system is functioning correctly.

*Please note that all pre-installation testing should always be conducted in a safe area.*
Division 1 Y-Purge Test

Equipment Required
- Clean, dry purge air or inert gas supply equipped with local water/oil separator or filter capable of supplying 150 SCFH at 20 - 100 PSI
- Fittings and tubing for purge air or inert gas supply (0.25” NPT Male to connect to the inlet of the purge system)
- Local air pressure shutoff valve

Procedure
1. Place the unit in a safe area near a source of the purge gas to be used (compressed air line or other inert gas source).

2. Through a cord grip or other cable-sealing device, bring AC power into the enclosure. Be sure that the AC power is off. Connect the AC power temporarily to the Y-purged unit (see drawing E010 or E013 at the end of this manual).

3. Temporarily install a pressure regulator, water/oil separator or filter, shutoff valve, pressure relief valve, and pressure gauge in the purge air or inert gas line (see drawing P002 at the end of this manual).

4. Bleed the purge air or inert gas line to insure that dirt, moisture, and other contaminants are cleared from the line prior to connecting the line to the unit.

5. Connect the purge gas line to the inlet of the regulator on the Purge Unit.

6. Apply air or inert gas to the enclosure. The enclosure may “swell” slightly as the internal pressure increases. This is normal and is not a cause for concern. D3 enclosures are designed to release excess pressure. DO NOT ATTEMPT TO OPEN THE ENCLOSURE WHILE IT IS PRESSURIZED.

7. Turn the control valve to PURGE. Look at the flow meter on the front panel to verify that the flow rate is 150 SCFH. If not, readjust the purge regulator to set the flow to 150 SCFH.

8. If the flow meter does not read 150 SCFH, inspect the enclosure for blockage in the purge gas lines and take appropriate action to clear the blockage. If blockages are not obvious, verify that the purge air or inert gas is clean and dry.

9. Slowly turn the control valve to OPERATE. If the control valve is turned rapidly, the indicator ball in the flow meter may start oscillating. Look at the pressure gauge on the front panel to be certain that the internal pressure is 1.0” of Water Column. If not, reset the adjustment on the exhaust assembly on the so that the pressure gauge reads 1.0” of Water Column.

10. Slowly turn the control valve to PURGE. Make sure that the flow meter reads 150 SCFH. If not, readjust the regulator for 150 SCFH.

11. Slowly return the control valve to OPERATE and apply power to the enclosure. The “Pressure Good” LED should be illuminated green. If not, check the internal pressure, it should be between
0.4” and 10.0” of Water Column. The pressure good led must be illuminated green at this time. If it is not, please consult the factory.

12. If the “Pressure Good” LED is not illuminated green, the internal pressure is below 0.4” Water Column and the alarm is on. Turn the enclosure power off and repeat steps 2 though 6.

Division 1 X-Purge Test

Equipment Required

- Clean, dry purge air or inert gas supply equipped with local water/oil separator or filter capable of supplying 40 to 300 SCFH at 30 to 60 PSI.
- Fittings and tubing for purge air or inert gas supply (0.25” NPT Male to connect to the inlet of the purge system).
- Local air pressure shutoff valve.
- AC power line (with ground) to pigtailed (tinned bare wire, stripped 0.25”), 120V, 10A or 240V, 5A

Procedure

1. Place the unit in a safe area near a source of the purge gas to be used (compressed air line or other inert gas source).

2. Temporarily install a pressure regulator, water/oil separator or filter, shutoff valve, pressure relief valve, and pressure gauge in the purge air or inert gas line (see drawing P007).

3. Bleed the purge air or inert gas line to insure that dirt, moisture, and other contaminants are cleared from the line prior to connecting the line to the unit.

4. Connect the purge gas line to the inlet of the regulator on the Purge Unit.

5. Remove the cover of the explosion-proof I/O casting (see drawing P007 at the end of this manual).

6. Connect an AC power line (not plugged into AC power outlet) to the power interface board (see drawing P008). For connection location and wiring, see drawing E017.

7. Close all access doors and covers.

8. Apply purge gas to the system by opening the shutoff valve (if installed). Adjust the pressure regulator on the air-in box (see drawing P008) so that the pressure gauge indicates 35 PSI.

9. Apply AC power to the unit.
10. Once the pressure inside the unit reaches 1.0” Water Column and at least 40 SCFH, the Purge Status LED will illuminate yellow, indicating that it is purging. If the purge status indicator does not turn yellow, inspect the unit for leakage. The gasketed panels can be checked with a soap solution. If leaks are not obvious, verify that the purge air of inert gas is clean and dry and that the pressure at the inlet is 35 PSI.

11. **DO NOT ATTEMPT TO OPEN THE ENCLOSURE WHILE IT IS PRESSURIZED.**

12. Note the reading on the Pressure Gauge while slowly turning the Air Input Regulator up until the purging process stops and the Purge Status LED flashes red with an error code of 2 – 2 (over pressure) or 3 – 2 (over flow).

13. Remove AC power from the enclosure for a minimum of 30 seconds. Decrease the pressure reading on the pressure gauge by 5 PSI. This change may vary slightly on some units; if in later testing the unit fails with an over flow error (3-2 blink code), decrease the inlet pressure by another 2 PSI. **Note this pressure for use during start-up.**

14. Re-apply AC power. The Purge Status LED will illuminate yellow. The system should purge for a minimum of 8 minutes. The time will vary according to the flow rate of the air into the enclosure; lower flow rates will result in a longer purge time.

15. After the purge is complete, the Purge Status indicator will illuminate green. AC power is now applied to the internal electronics so you should be able to power on the display or PC.

16. **If the purge status light blinks red**, one of several possible errors has been detected. Please refer to Table 2 on page 18 for an explanation of the possible error codes.
Division 1 Installation

PAC-Seal Connection Instructions
A conduit seal is necessary for most equipment enclosures in hazardous areas. For Y-purge and X-purge systems, they are always required. Please consult your local code for other circumstances.

The sealing compound generally used for PAC-seals is an inorganic, chemically setting, magnesium oxide base material. This compound develops a slight expansion, while hardening into a porcelain-like body. A powder sealing compound is supplied and should only be mixed with water for application.

The sealing compound powder has a shelf life of six months when stored in unopened, tightly sealed containers in a dry location at 70°F. Any equipment accidentally splashed with sealing compound should be cleaned with soap and water before the sealing compound cures. Approximately one ounce of sealing compound is needed per cubic inch of space to be filled.

Please note to always follow all NEC, NFPA, and local codes when installing conduit and PAC-seals in hazardous areas. All knowledgeable personnel, familiar with national and local codes, must supervise hazardous area equipment installations. In Europe your equipment will most likely be installed with cable and cable glands. Refer to EN 60079-14:2003 and local codes when applicable.

Equipment Required

- Four PAC-Seal fittings, 1” NPT or 0.75” NPT for the Y-Purge, 0.75”NPT only for the X-Purge (2 for conduit connection at the enclosure or I/O casting, 2 for connection in the safe area), or sealing conduits. The PAC Seal and conduit size selected will depend on the size and number of conductors, which must be run to the unit. Check the NEC tables (Chapter 9, Table 4) to determine the conduit size necessary
- Conduit for electrical signals and for electrical power (separate runs), NEC and NFPA approved for use in hazardous areas
- NEC and NFPA approved flexible conduit if needed for difficult installations
- Fittings as required for permanent conduit installation NEC and NFPA approved for use in hazardous areas
- Signal cables, power cables, and connectors as required to mate with the equipment within the enclosure or cast aluminum box
- AC power switch for use in the safe area

Procedure

1. Threaded surfaces and pour locations should be cleaned with soap and water and thoroughly dried before proceeding.

2. On a Y-purge system, no entryway is provided by D3 for power and signal conduits. These entries must be made by the end user. Select a point on the enclosure that matches well with the location of the incoming conduit. Be careful to ensure that the point you have selected is free from obstructions within the D3 enclosure. Being careful to protect the internal electronics, air pathways, and keyboard surface from filings and other debris, drill or punch holes for the installation of the PAC-Seal fitting (1” NPT or 0.75” NPT, depending on application) in the wall of the enclosure.
3. Install two conduit runs (one signal, one power) between the enclosure (Y-Purge) or the I/O casting (X-Purge) and AC power source (located in a safe area or in an explosion-proof box). See drawing P002 or P007 at the end of this manual.

4. Shake the sealing compound powder well before mixing with water. The recommended mix ratio is 5 parts powder to 1 part clean water, by weight. Place 70°F water into a clean mixing container and gradually add powder to water while mixing. Continue mixing until a uniform consistency is obtained. Mixing may be done with a slow-speed mixer or by hand with a spatula. The minimum amount of water (as specified above) should be used as excess water reduces mechanical strength, increases shrinkage, and delays set time. Failure of the cement to adhere indicates setting has begun, discard cement, do not attempt to re-temper by adding more water.

5. The compound may be applied by pouring, casting, or mechanical dispenser. The sealing compound hardens with an internal chemical-setting action in 18 to 24 hours at ambient temperature. Working time of the sealing compound when the powder is mixed with water is approximately 30 minutes at 70°F. If accelerated curing is desired, low temperature oven drying at 180°F can be used. Do not expose the sealing compound to higher temperatures, constant water immersion, or steam environments while curing. If high humidity resistance is required in the cured product, a moisture-resistant lacquer or silicone coating should be applied to the exposed surfaces.

6. The packing fiber is made from an environmentally safe, non-asbestos material. It is easy to use and forms a positive dam to hold the compound. The fiber is placed around each individual wire or cable at both ends of the cavity for horizontal pouring in the PAC Seal so that the Sealing Compound can encapsulate each completely. For vertical pouring, the packing fiber need only be placed at one end. See drawing P002 at the end of this manual.

7. We recommend a special blend of lubricants, LUBT-2, for use with threaded joints. This lubricant is to be used to prevent galling of the pipe threads when threaded into a coupling, junction box, etc. It insures a quick release and undamaged male and female threads when parts are disassembled. The thread lubricant is high quality lubricant to be used in temperatures ranging from -40°F to +50°F. It is recommended for use in a hazardous location. The PAC Seal Compound, packing fiber and LUBT-2 are available from Killark at http://www.killark.com/.

8. For enhanced reliability of the unit, install an AC line conditioner. AC power lines should be no smaller than 14 gauge and have a TRUE EARTH GROUND.
Purge Air Line Connection Instructions

For Division 1 Y-Purge Systems
This section applies to the following models: 2513, 2515, 2613, 2615, 4613, 4615, 4613, and 4515.

After the unit has been mounted in its final location in the hazardous area, it must be permanently connected to a purge air or inert gas line and checked for leaks and proper operation of the purge/pressurization system. Only when its pressure integrity has been established should electrical signals and power be brought "live" to the unit.

Please note to always follow all NEC, NFPA, and local codes when installing conduit and PAC-seals in hazardous areas. All knowledgeable personnel, familiar with national and local codes, must supervise hazardous area equipment installations.

Equipment Required
- Clean, dry purge air or inert gas supply equipped with local water/oil separator or filter capable of supplying 150 SCFH at 20 - 100 PSI
- Fittings and tubing for purge air or inert gas supply (0.25" NPT Male to connect to the inlet of the purge system)
- Local air pressure shutoff valve

Procedure
1. Mount the enclosure in the location in which it will be installed. This must be near the source of air or inert gas to be used for the purge system.

2. Install the pressure regulator, water/oil separator or filter, shutoff valve, pressure relief valve, and pressure gauge in the purge air or inert gas line (see drawing P002).

3. Bleed the purge air or inert gas line to insure that dirt, moisture, and other contaminants are cleared from the line prior to connecting the line to the unit.

4. Connect the line to the inlet of the regulator on the Purge Unit.

5. Apply air or inert gas to the enclosure. The enclosure may "swell" slightly as the internal pressure increases. This is normal and is not a cause for concern. D3 enclosures are designed to release excess pressure. DO NOT ATTEMPT TO OPEN THE ENCLOSURE WHILE IT IS PRESSURIZED.

For Division 1 X-Purge Systems
This section applies to the following models: 2563, 2565, 2663, 2665, 4563, 4565, 4663, and 4665.

After the unit has been mounted in its final location in the hazardous area, it must be permanently connected to a purge air or inert gas line and checked for leaks and proper operation of the purge/pressurization system. Only when its pressure integrity has been established should electrical signals and power be brought “live” to the unit.
Please note to always follow all NEC, NFPA, and local codes when installing conduit and PAC-seals in hazardous areas. All knowledgeable personnel, familiar with national and local codes, must supervise hazardous area equipment installations.

Equipment Required
- Clean, dry purge air or inert gas supply equipped with local water/oil separator or filter capable of supplying 40 to 300 SCFH at 30 to 60 PSI.
- Fittings and tubing for purge air or inert gas supply (0.25” NPT Male to connect to the inlet of the purge system).
- Local air pressure shutoff valve.

Procedure
1. Mount the enclosure in the location in which it will be installed. This must be near the source of air or inert gas to be used for the purge system.

2. Install the pressure regulator, water/oil separator or filter, shutoff valve, pressure relief valve, and pressure gauge in the purge air or inert gas line (see drawing P007 at the end of this manual).

3. Bleed the purge air or inert gas line to insure that dirt, moisture, and other contaminants are cleared from the line prior to connecting the line to the unit.

4. Connect the purge gas line to the inlet of the regulator on the Purge Unit.

5. The PAC-Seals bringing the power and signals to the explosion-proof I/O casting should already be installed. Connect the signal lines to the interlock system (see drawings E018, E019, E022, E025, and E016).

6. Ensure that the power to the AC supply lines is disconnected. Connect the power line(s) to the X-purge system (see drawing E017).

7. If the area can be made safe, you may want to test your connections before closing the explosion-proof I/O casting. If you test the system in place, it is VITAL that you ENSURE THAT THE AREA IS SAFE during the test and FOLLOW ALL APPLICABLE SAFETY PROCEDURES for “hot work” in a hazardous area. You can test connections without purging by holding down the “Bypass Purge” button (see drawing E020) while applying power; you must release the button within 30 seconds of power application to prevent a diagnostic error. When the button is released, power and signals are immediately “live” to the system; you can test operation to make sure that the connections have been made correctly. Disconnect power IMMEDIATELY upon completion of this test to ensure that the unit is not erroneously operated in bypass mode.

8. When the signal and power connections are complete, replace the cover on the I/O casting and secure with the supplied 14 hex-head bolts. Torque these bolts to 7.5 ft. lbs.

Start-Up Operation

Division 1 Y-Purge Start-Up Operation

1. When the air, signal, and power connections are complete, replace and close all access doors and covers.
2. Turn the Control valve to PURGE. Look at the Flow Meter on the front panel to verify that the flow rate is 150 SCFH. If not, readjust the Purge Regulator to set the flow to 150 SCFH.

3. If the Flow Meter does not read 150 SCFH, inspect the enclosure for blockage in the purge gas lines and take appropriate action to clear the blockage. If blockages are not obvious, verify that the purge air or inert gas is clean and dry.

4. Slowly turn the Control Valve to OPERATE. If the Control Valve is turned rapidly, the ball in the Flow Meter may start oscillating. Look at the pressure gauge on the front panel to be certain that the internal pressure is 1.0” of Water Column. If not, reset the adjustment on the exhaust assembly on the so that the pressure gauge reads 1.0” of Water Column.

5. Slowly turn the Control Valve to PURGE. Make sure that the Flow Meter reads 150 SCFH. If not, readjust the regulator for 150 SCFH.

6. After a 10-minute purge cycle, slowly turn the control valve to OPERATE.

7. Apply power to the enclosure. The Pressure Good LED should be illuminated green. If not, check the internal pressure: it should be between 0.4” and 10.0” of Water Column. The pressure good led must be illuminated green at this time. If it is not, please consult the factory.

8. If the Pressure Good LED is not illuminated green, the internal pressure is below 0.4” Water Column and the Alarm is on. Turn power off to the enclosure and repeat steps 2 though 6.

**Division 1 X-Purge Start-Up Operation**

1. When the air, signal, and power connections are complete, replace and close all access doors and covers.

2. Apply AC power. The Purge Status LED will illuminate red. Power is now applied though the Intrinsic Safety Barriers to the purge/pressurization control circuits only.

3. Apply purge gas to the system by opening the shutoff valve (if installed). If the pre-installation test has been performed, the air-in pressure regulator will be preset – you should begin the start-up process at the pressure noted during testing. Otherwise, adjust the pressure regulator on the air-in box (see drawing P008) so that the pressure gauge indicates 35 PSI.

4. Once the pressure inside the unit reaches 1.0” Water Column and at least 40 SCFH, the Purge Status LED will illuminate yellow, indicating that it is purging. If the purge status indicator does not turn yellow, inspect the unit for leakage. The gasketed panels can be checked with a soap solution. If leaks are not obvious, verify that the purge air of inert gas is clean and dry and that the pressure at the inlet is 35 PSI (or, if a pre-installation test was completed, at the pressure noted during that test).

5. **DO NOT ATTEMPT TO OPEN THE ENCLOSURE WHILE IT IS PRESSURIZED.**

6. If the pre-installation test was completed and the unit appears to be functioning correctly within the same parameters as during the test, you may skip the remaining steps of this procedure.

7. Note the reading on the Pressure Gauge while slowly turning the Air Input Regulator until the Purge Status LED flashes red with an error code of 2 – 2 (over pressure) or 3 –2 (over flow).
8. Remove AC power from the enclosure for a minimum of 30 seconds. Decrease the pressure reading on the pressure gauge by 5 PSI. This change may vary slightly on some unit; if the unit fails during purging with an over flow error (3-2 blink code), decrease the inlet pressure by another 2 PSI.

9. Re-apply AC power. The Purge Status LED will illuminate yellow. The purge time is set for a minimum of 8 minutes. The time will vary according to the flow rate of the air into the enclosure.

10. After the purge is complete, the Purge Status indicator will illuminate green. AC power is now applied to the internal electronics and the signal relays are closed.

11. If the purge status light blinks red, one of several possible errors has been detected. Please refer to Table 2 on page 18 for an explanation of the possible error codes.

**Operation Notes**

**Division 1 Y-Purge**

When using a Y-purge system, it is the operator’s responsibility to disconnect power and signal paths in the event of a purge failure if the pressure in the unit falls below a preset level.

D3 units are equipped with both an indicator light (the “Pressure Good” LED shown on drawing P008) and an internal pressure meter (shown on the same drawing). If the “Pressure Good” indicator is extinguished, or if the internal pressure meter is in the red zone below 1” of water column, the operator should immediately disconnect power and signal connections to the unit using switches in a safe area.

D3’s Y-purge systems are also equipped with alarm contacts that switch state simultaneously with the “Pressure Good” indicator. These can be connected to an alarm system or supervisory control system to provide further indications to the operator and/or the supervisory system. The operation of the alarm contacts and the “Pressure Good” indicator light is detailed in the flowchart shown in Figure 1 and in Table 1 on page 17.
Figure 1 - Y-Purge Alarm Logic
**Table 1 - Y-Purge Alarm and Indicator States**

<table>
<thead>
<tr>
<th>Power is</th>
<th>Pressure is</th>
<th>NC1 &amp; NC2 are</th>
<th>NO1 &amp; NO2 are</th>
<th>Pressure Good LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>&lt; 0.4” W.C.</td>
<td>Closed</td>
<td>Open</td>
<td>Off</td>
</tr>
<tr>
<td>Off</td>
<td>&gt; 0.4” W.C.</td>
<td>Closed</td>
<td>Open</td>
<td>Off</td>
</tr>
<tr>
<td>On</td>
<td>&lt; 0.4” W.C.</td>
<td>Open</td>
<td>Closed</td>
<td>Off</td>
</tr>
<tr>
<td>On</td>
<td>&gt; 0.4” W.C.</td>
<td>Closed</td>
<td>Open</td>
<td>On</td>
</tr>
</tbody>
</table>

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**Division 1 X-Purge**

X-purge systems are fully automatic. The system safely disconnects power and signal paths in the event of a purge failure.

The D3 purge control also performs automatic self-diagnostics and can report other errors. Table 2 details both the normal conditions and the errors (fatal and non-fatal) that are reported by the purge status LED (see drawing P008, indicated by note 9).

*Please note* that blink codes can be read in forward or reverse; that is, code 2-3 is the same is code 3-2. A “0” in the code column indicates steady (non-blinking) light. The status column indicates the nature of the information being given: “informative” is simply a status indication and no action needs to be taken, “non-fatal” is a condition that can be corrected and operation will then proceed normally, and “fatal” are errors that require that the purge system be shut down before correcting the problem and restarting the purge cycle.

<table>
<thead>
<tr>
<th>Color</th>
<th>Code</th>
<th>Meaning</th>
<th>Status</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>0</td>
<td>Operate, purge</td>
<td>Informative</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>0</td>
<td>Purge in progress</td>
<td>Informative</td>
<td>n/a</td>
</tr>
<tr>
<td>Yellow</td>
<td>1-1</td>
<td>Minor over flow</td>
<td>Non-fatal</td>
<td>Turn the air in regulator down a few PSI.</td>
</tr>
<tr>
<td>Red</td>
<td>0</td>
<td>Waiting to begin</td>
<td>Non-fatal</td>
<td>Turn the purge gas supply on. If it is on, the enclosure may not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>purge</td>
<td></td>
<td>be developing enough internal pressure – make sure all doors and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>access panels are closed. Also, the air inlet pressure may not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>be high enough – try turning the regulator up.</td>
</tr>
<tr>
<td>Red</td>
<td>1-1</td>
<td>System Error</td>
<td>Fatal</td>
<td>Contact D3 customer service (see section 0, Customer Service on</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>page 18 in this manual).</td>
</tr>
<tr>
<td>Red</td>
<td>2-1</td>
<td>Under pressure</td>
<td>Fatal</td>
<td>Loss of pressure is usually due to a door being opened or failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of the purge gas supply. Check both.</td>
</tr>
<tr>
<td>Red</td>
<td>2-2</td>
<td>Over pressure</td>
<td>Fatal</td>
<td>Turn the air inlet regulator down at least 5 PSI. Repeat until</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>purge will complete without error. If problems continue, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>occur during operation, contact D3 customer service (see section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0, Customer Service on page 18 in this manual).</td>
</tr>
<tr>
<td>Red</td>
<td>3-2</td>
<td>Major over flow</td>
<td>Fatal</td>
<td>Turn the air inlet regulator down at least 5 PSI.</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-----------------</td>
<td>-------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Red</td>
<td>3-3</td>
<td>Water detected</td>
<td>Fatal</td>
<td>This should only occur if a water sensor option is installed. If it is installed, the unit must be opened and dried completely out. Ensure that no water remains in the unit and that there is no damage to the internal components resulting from the water. <strong>In case of serious water incursion, DO NOT ATTEMPT TO REAPPLY POWER TO THE EQUIPMENT; the equipment should be returned to D3 for evaluation.</strong></td>
</tr>
<tr>
<td>Red</td>
<td>4-1</td>
<td>Faulty pressure sensor</td>
<td>Fatal</td>
<td>A purge system component has failed. Please contact D3 customer service (see section 0, Customer Service on page 18 in this manual).</td>
</tr>
<tr>
<td>Red</td>
<td>4-2</td>
<td>Faulty flow sensor</td>
<td>Fatal</td>
<td>A purge system component has failed. Please contact D3 customer service (see section 0, Customer Service on page 18 in this manual).</td>
</tr>
<tr>
<td>Red</td>
<td>4-3</td>
<td>Short purge switch is stuck</td>
<td>Fatal</td>
<td>The “Short Purge” switch on the DIP switch mounting board (see drawing E020) is either shorted or stuck, or the operator has held it down too long while beginning a test. Ensure that there is nothing holding the switch closed or shorting the circuit. If you continue to experience problems, contact D3 customer service (see section 0, Customer Service on page 18 in this manual).</td>
</tr>
<tr>
<td>Red</td>
<td>4-4</td>
<td>Bypass purge switch is stuck</td>
<td>Fatal</td>
<td>The “Bypass Purge” switch on the DIP switch mounting board (see drawing E020) is either shorted or stuck, or the operator has held it down too long while beginning a test. Ensure that there is nothing holding the switch closed or shorting the circuit. If you continue to experience problems, consult D3 contact D3 customer service (see section 0, Customer Service on page 18 in this manual).</td>
</tr>
</tbody>
</table>

**Table 2 - X-Purge Status Light Key**

Chapter 8 has a complete trouble-shooting guide to help you quickly identify any problems that may occur.

Should you have any further inquiries or comments, please contact D3’s customer service department.

**Business Phone** (1) 717-932-9999 x 222  
**Fax** (1) 717-932-8000  
**Email** support@d3inc.net
Equipment returned to D3 for service must be accompanied by a valid return merchandise authorization (RMA) number. Items or products shipped to D3 without a valid RMA number will be refused. An RMA will be generated upon receipt of Company Name, Address, Contact, Product Model and Serial Numbers.

**Typical Model/Serial Number Tag**

![Typical Model/Serial Number Tag](image)

Daisy Data Displays Inc. prides itself on offering best in class support for your products. Our technical support team can help you with installation, configuration, troubleshooting, and other support issues for all D3’ products.

---

**Trouble-Shooting Guide**

**Division 1 Y-Purge Trouble-Shooting**

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SUGGESTED SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The flow cannot be adjusted up to 150 SCFH during purge</td>
<td>Improper flow meter reading</td>
<td>For correct operation, the purge unit must be mounted vertically so that the flow meter is vertically plumb.</td>
</tr>
<tr>
<td>Improper regulator adjustment</td>
<td>Adjust the air inlet regulator to increase air supply.</td>
<td></td>
</tr>
<tr>
<td>The purge control is not set to purge</td>
<td>Check the position of the control valve to ensure that it is set to “Purge.”</td>
<td></td>
</tr>
<tr>
<td>Insufficient air supply</td>
<td>Check your purge gas supply to ensure that it can supply 150 SCFH. If you cannot achieve 150 SCFH, then purge times must be recalculated. Contact D3 customer service for assistance.</td>
<td></td>
</tr>
<tr>
<td>Restrictions in the air supply line</td>
<td>Check your air supply line for blockages and kinks.</td>
<td></td>
</tr>
<tr>
<td>Contamination in the air supply</td>
<td>Ensure that the purge gas supply is clean, dry, and free of oil – a water/oil separator should be installed near the connection to the purge control.</td>
<td></td>
</tr>
<tr>
<td>Restrictions in the purge line from the purge control into the enclosure</td>
<td>Ensure that the purge line from the purge control into the enclosure is not kinked, has no internal obstructions, and is unrestricted at its open end (at least 0.5” from any object in the path of the air flow).</td>
<td></td>
</tr>
<tr>
<td>During operation (control valve set to &quot;Operate&quot;), the internal pressure does not</td>
<td>The enclosure is not sealed and is leaking</td>
<td>Ensure that all access doors are closed and latched. Ensure that all access panels are closed and sealed. Make sure no unsealed holes or openings are present in the enclosure.</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>POSSIBLE CAUSE</td>
<td>SUGGESTED SOLUTION</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>reach/will not maintain 1&quot; of water column</td>
<td>Insufficient air flow</td>
<td>Adjust the regulator on the purge control to increase the air flow</td>
</tr>
<tr>
<td></td>
<td>PAC-Seals are not poured</td>
<td>PAC-Seals must be poured in conduits entering the enclosure to prevent air from escaping via the conduit entry. Ensure that this has been done.</td>
</tr>
<tr>
<td></td>
<td>Exhaust control valve setting incorrect</td>
<td>Adjust the purge control exhaust valve for a higher internal pressure. It may take several minutes for adjustments to this setting to take effect.</td>
</tr>
<tr>
<td>During operation (control valve set to &quot;Operate&quot;), the internal pressure does not reach/will not maintain 1&quot; of water column</td>
<td>Restrictions in the air connections</td>
<td>Ensure that the air connection at the regulator is not kinked, has no obstructions, and is firmly connected.</td>
</tr>
<tr>
<td>The “Pressure Good” indicator does not light when the unit is powered</td>
<td>Incorrect power-up sequence</td>
<td>1.1.1 Power should only be applied to the enclosure after the internal pressure has reached 1&quot; of water column or higher and when the full purge time has elapsed</td>
</tr>
<tr>
<td></td>
<td>Insufficient internal pressure</td>
<td>1.1.2 The pressure within the enclosure must be within the operating (or &quot;safe&quot;) range. If you are having trouble maintaining a suitable pressure, see the previous section of this trouble-shooting guide.</td>
</tr>
<tr>
<td></td>
<td>Alarm board is not receiving power</td>
<td>1.1.3 Ensure that AC power has been connected to the unit, and that the power is turned on</td>
</tr>
<tr>
<td></td>
<td>Voltage is set incorrectly</td>
<td>1.1.4 Ensure that the 120/240 VAC switch on the alarm board is set appropriately for your power source</td>
</tr>
</tbody>
</table>

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Daisy Data Displays, Inc.
### Division 1 X-Purge Trouble-Shooting

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SUGGESTED SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When power is applied, the purge status indicator light does not come on</td>
<td>Power is not connected to the unit</td>
<td>Connect AC power to the power connection on the purge system. Ensure that the power switch is on. Ensure that AC power is on.</td>
</tr>
<tr>
<td></td>
<td>Improper line voltage selection</td>
<td>Ensure that the 120/240 VAC switch on the purge control is set appropriately for your power source.</td>
</tr>
<tr>
<td>After power is applied, the purge status indicator stays solid red; it does not switch to yellow or blink</td>
<td>No air supply to unit</td>
<td>1.1.5 Ensure that a purge gas line is connected to the unit and that the supply line is “on.” The pressure gauge on the air-in box should indicate a higher pressure than 20 PSI</td>
</tr>
<tr>
<td></td>
<td>Restrictions in air line</td>
<td>1.1.6 Ensure that supply line and inlet connect have no restrictions and that the supply line is not kinked</td>
</tr>
<tr>
<td></td>
<td>Restrictions in main purge line inside enclosure</td>
<td>1.1.7 Ensure that the main purge line (terminating in a brass tee fitting) is not kinked or disconnected</td>
</tr>
<tr>
<td></td>
<td>Leaks in the enclosure</td>
<td>1.1.8 Ensure that all access doors are closed and latched. Ensure that all access panels are closed and sealed. There should be no holes or openings in the enclosure.</td>
</tr>
<tr>
<td>The purge status indicator is yellow, but the enclosure takes an excessively long time to complete the purge (when the status indicator turns green)</td>
<td>Low purge gas supply pressure</td>
<td>1.1.9 Increase purge gas inlet pressure at the air-in regulator or on the main supply line</td>
</tr>
<tr>
<td></td>
<td>Restriction in the main purge line</td>
<td>1.1.10 Ensure that the main purge line within the enclosure (ending in a brass tee fitting) is not kinked or obstructed</td>
</tr>
<tr>
<td>Purge status indicator flashes yellow and purge takes an excessively long time to complete.</td>
<td>Low purge gas supply pressure</td>
<td>1.1.11 Increase purge gas inlet pressure at the air-in regulator or on the main supply line</td>
</tr>
<tr>
<td>Purge or operation stops and purge status indicator flashes red code</td>
<td>Fatal purge error</td>
<td>1.1.12 See No.2 on page 18</td>
</tr>
</tbody>
</table>
**Specifications**

**Materials**
All materials comply with NEMA 4X standards
Enclosure and Hardware .....................................Stainless Steel
Explosion-proof I/O Casting ....................................Cast Aluminum (Division 1 X-purge)
Explosion-proof I/O Casting Bolts ..........................Hardened Steel (Division 1 X-purge)

**Mechanical**
See drawings for dimensions

**Environmental**
Operating Temperature ......................................\(-17.78° - +29.4°C (0° - +85°F)\)
Storage Temperature ..............................................\(-17.78° - +60°C (0° - +140°F)\)
Relative Humidity ......................................................5% - 95% RH Non-condensing

**Electrical**
Voltage .................................................................120/240 VAC
Frequency ...............................................................60/50 Hz
Power (Monitors) .....................................................60W Maximum
Power (PCs) ..............................................................360W Maximum

**Air Requirements**
NEMA 12 and NEMA 4X ..........................................No air required
Division 2 Non-incentive ........................................No air required
Division 1 Y-Purge ..................................................150 SCFH Minimum
Division 1 X-Purge ..................................................300 SCFH Optimum
20 - 60 PSI Recommended at Inlet

**Display (based on 60 Hz refresh frequency)**
Resolution Maximum ...........................................640 x 480 (10.4")
800 x 600 (12.1")
1024 x 768 (15")
1280 x 1024 (18.1")
1280(x3) x 1024 (19")
1600(x3) 1200 (20")

Dot Pitch ............................................................11 (H) X .33(V) mm (10.4")
.1025 (H) X .3075 (V) mm (12.1")
0.297mm (15")
0.281mm (18.1")
0.294mm (19")
0.255mm (20")

Viewable Size ......................................................211.2 (H) X 158.4 (V) mm (10")
246.0 (H) X 184.5 (V) mm (typ.) (12")
232.664 x 308.864 mm (15.1")
292.1 x 363.982mm (18.1")
376.32 (H) x 301.056 (V) (19")
408mm (H) x 306mm (V) (20")

Viewing Angle .......................................................*NOTE

Typical Brightness .................................................10" 380-400 nits
12" 400
15.1" 250-600 nits
18.1" 250 nits
19" 300 nits
20" 200-300 nits

Color Depth ..........................................................24 bits

*NOTE
Due to frequent technology changes please call for specific model specifications.
# Drawings

<table>
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<th>Description</th>
<th>Page</th>
</tr>
</thead>
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<td>Panel Mount Monitors: Mechanical and mounting drawings</td>
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</tr>
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<td>E001</td>
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<td>M003</td>
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<tr>
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<td>2620/4320</td>
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Daisy Data Displays Inc.
2850 Lewisberry Road, York Haven, PA 17370
Electrical Block Diagram Drawing

We Thrive in the Harshest Environments Voice: (717) 932-9999   FAX: (717) 932-8000   or Visit Us At www.daisydata.com
Panel Mount Enclosure

20.1” Display P000-000107

Inverter +12V

Display

Video Control Board

Lamp Wires

120 VAC Input

Power Supply +12V

Daisy Data Displays Inc.

Dimensions are in inches

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TABLETOP MOUNT

WALL MOUNT

DISPLAY SIZE  X    Y    Z
12.1" & 15.1"  21.00"  15.44"  7.72"
18.1" & 20.1"  27.00"  18.88"  9.49"

MODEL 2552: NEMA 4X FLAT PANEL 12" MONITOR
MODEL 2553: NEMA 4X FLAT PANEL 15" MONITOR
MODEL 2555: NEMA 4X FLAT PANEL 18" MONITOR
MODEL 2557: NEMA 4X FLAT PANEL 20" MONITOR
MODEL 4552: NEMA 4X 12" FLAT PANEL PC
MODEL 4553: NEMA 4X 15" FLAT PANEL PC
MODEL 4555: NEMA 4X 18" FLAT PANEL PC
MODEL 4557: NEMA 4X 20" FLAT PANEL PC

<table>
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<tr>
<th>DISPLAY SIZE</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>W1</th>
<th>W2</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>VH</th>
<th>VW</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1&quot;</td>
<td></td>
<td></td>
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</table>

BASIC OVERALL DIMENSIONS

WE THRIVE IN THE HARSHEST ENVIRONMENTS Voice: (717) 932-9999  FAX: (717) 932-8000  or Visit Us At www.daisydata.com

DIMENSIONS ARE IN INCHES
THE RIGHT TO CANCEL OR ALTER ANY EQUIPMENT OR POLICY IS RESERVED. NO REPRESENTATION OF PERFORMANCE OF ANY EQUIPMENT IS IMPLIED; ALL IS SUBJECT TO CHANGE WITHOUT NOTICE

Daisy Data Displays Inc. 2900 Levittown Road, York, PA 17404
MECHANICAL ASSEMBLY DIAGRAMS
MECHANICAL ASSEMBLY DRAWING
M003  A

SHEET 1 OF 1
NOTES:

1. REFER TO ALL LOCAL CODES FOR CONDUIT ENTRY INFORMATION!
   The top plate on the enclosure has three, 1/4" pilotholes for cable entry. Drill any of the 3 holes to the correct size for your conduit or cord grip. If choosing to enter the enclosure at another point, examine the inside of the enclosure so the internal equipment will not be damaged. Carefully clean the inside after attaching your conduit or cord grip.

2. When using a cord grip, select a size that will "grip" the cables without damaging the cables. Daisy data can provide the following cord grip sizes:
   - M290-000008: 0.25 NPT, 0.25" cable dia.
   - M290-000010: 0.375 NPT, 0.25" cable dia.
   - M290-000015: 0.375 NPT, S.S., 0.25" cable dia.
   - M290-000014: 0.375 NPT, 0.3125" cable dia.
   - M290-000003: 0.5 NPT, 0.1875" cable dia.
   - M290-000009: 0.5 NPT, S.S., 0.1875" cable dia.
   - M290-000014: 0.5 NPT, 0.25" cable dia.
   - M290-000010: 0.5 NPT, S.S., 0.25" cable dia.
   - M290-00002: 0.5 NPT, 0.375" cable dia.
   - M290-000012: 0.5 NPT, 0.5" cable dia.
   - M390-00012: 0.5 NPT, seal nut
   All cord grips are zinc plated steel except M290-000015, M290-000009 & M290-000010. These are stainless steel.

3. See Table 1 for the Daisy data KVM CATS input cable model number & length.

### Table 1

<table>
<thead>
<tr>
<th>Model</th>
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<td>350'</td>
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**Dimensions are in inches.**

Daisy Data Displays Inc.
2850 Lewisberry Road, York Haven, PA 17370

**Electrical Block Diagram Drawing**

Drawing Number: P001

We Thrive in the Hardest Environments Voice: (717) 932-9999 FAX: (717) 932-8000 or Visit Us At www.daisyydata.com
TABLE 1

<table>
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<tr>
<td>9572</td>
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</tr>
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NOTES:

1. THE 120 VAC POWER INPUT CONNECTION IS LOCATED ON THE INSIDE REAR WALL IN THE UPPER LEFT CORNER FOR ALL MODELS SHOWN. USE THE CONNECTION PIN-OUT OF THE 8 POSITION TERMINAL STRIP.

2. THE KVM REMOTE RECEIVER IS LOCATED ON THE CENTER OF THE INSIDE REAR WALL FOR ALL MODELS SHOWN. THE KVM RECEIVER INPUT DATA CABLE IS A RJ45 CAT5 CABLE. THIS CABLE CAN BE UP TO 100 FEET LONG. USE THE PIN-OUT FROM THE SUPPLIED KVM MANUAL FOR THIS CABLE. THE KVM RECEIVER MAY BE DAMAGED IF THE PIN-OUT IS NOT FOLLOWED.

3. MODELS WITH THE "NO KVM INSTALLED" OPTION REQUIRE A CUSTOMER-SUPPLIED HD15 PLUG SDGA VIDEO CABLE CONNECTED TO THE UNIT. THE HD15 VIDEO INPUT CONNECTION IS LOCATED ON THE REAR OF THE FRONT DOOR FOR ALL MODELS SHOWN.

4. SEE TABLE 1 FOR THE DAISY DATA KVM CATS INPUT CABLE MODEL NUMBER & LENGTH.

5. FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "POD1".
NOTES:

1. THE 120 VAC POWER INPUT CONNECTION IS LOCATED ON THE INSIDE REAR WALL IN THE UPPER LEFT CORNER FOR ALL MODELS SHOWN. USE THE CONNECTION PIN-OUT OF THE 6 POSITION TERMINAL STRIP.

2. THE SINGAL BOARD COMPUTER IS LOCATED ON THE CENTER OF THE INSIDE REAR WALL FOR ALL MODELS SHOWN. THE 10/100 BASE NETWORK IS STANDARD FOR ALL PCs. THE RUMS — RUMS CATS CABLE CAN BE UP TO 328 FEET LONG.

3. SEE TABLE 1 FOR THE DAISY DATA CATS INPUT CABLE MODEL NUMBER & LENGTH.

4. FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "POO".

TABLE 1

<table>
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<td>9569</td>
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<tr>
<td>9570</td>
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</table>

MODEL 4542: NEMA 12 12" FLAT PANEL INTEGRATED PC
MODEL 4543: NEMA 12 15" FLAT PANEL INTEGRATED PC
MODEL 4544: NEMA 12 18" FLAT PANEL INTEGRATED PC
MODEL 4545: NEMA 12 20" FLAT PANEL INTEGRATED PC
MODEL 4546: NEMA 12 24" FLAT PANEL INTEGRATED PC
MODEL 4547: NEMA 4X 12" FLAT PANEL INTEGRATED PC
MODEL 4548: NEMA 4X 13" FLAT PANEL INTEGRATED PC
MODEL 4549: NEMA 4X 18" FLAT PANEL INTEGRATED PC
MODEL 4550: NEMA 4X 20" FLAT PANEL INTEGRATED PC
MODEL 4551: NEMA 4X 24" FLAT PANEL INTEGRATED PC
MODEL 4552: DIVISION 2 NON-INCENDIVE NON-INTEGRATED 12" FLAT PANEL PC
MODEL 4553: DIVISION 2 NON-INCENDIVE NON-INTEGRATED 15" FLAT PANEL PC
MODEL 4554: DIVISION 2 NON-INCENDIVE NON-INTEGRATED 18" FLAT PANEL PC
MODEL 4555: DIVISION 2 NON-INCENDIVE NON-INTEGRATED 20" FLAT PANEL PC
TABLE 1

<table>
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<td>9570</td>
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</table>

MODEL 4345: NEMA 12 18" FLAT PANEL INTEGRATED PC
MODEL 4355: NEMA 4X 18" FLAT PANEL INTEGRATED PC
MODEL 4325: DIVISION 2 NON-INCENDIVE 18" FLAT PANEL INTEGRATED PC

CUSTOMER SUPPLIED 120VAC INPUT CABLE

NOTES:
1. MODELS 4345, 4355, & 4325 HAVE THE KEYBOARD & POINTING DEVICE INSTALLED.
2. MODELS 4455, 4555, & 4525 DO NOT INCLUDE THE KEYBOARD & POINTING DEVICE.
3. THE MEMBRANE KEYBOARD IS STANDARD. OPTION #39 ADDS THE ELASTOMETRIC KEYBOARD PART NUMBER I301-0000018, WITH PCB # I024-0000004-04.
4. THE STANDARD CPU SPEED, MEMORY, HARD DRIVE & CD ROM DRIVE WILL CHANGE WITH THE LATEST TECHNOLOGY. PLEASE REFER TO YOUR SYSTEM CONFIGURATION FORM.
5. FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "POUT".
6. SEE TABLE 1 FOR THE DAISY DATA CATS INPUT CABLE MODEL NUMBER & LENGTH.
Internal Pressure Meter ⑥ M390-000086

Mounting Holes (14)

Flow Meter ⑦ 20 – 200 SCFH M340-000010

Control Valve ① M390-000087

Regulator, 20 PSI M340-000001 ②

Pressure Good LED ③

Alarm Reset Switch ④

Exhaust Adjustment ⑥

Atmosphere Sense ⑤

NOTES:

① CONTROL VALVE:
Adjusts the amount of air entering the enclosure with the purge/operate control. Switches the airflow into the enclosure from purge to operate.

② REGULATOR:
Adjusts the flow to 150 SCFH during purge.

③ PRESSURE GOOD LED (PART OF THE ALARM BOARD OPTION):
This LED illuminates green whenever the internal pressure is above 0.4" WC & the alarm relay is reset.

④ ALARM RESET SWITCH (PART OF THE ALARM BOARD OPTION):
Used to reset the customer contacts after an alarm condition.

⑤ ATMOSPHERE SENSE (PART OF THE ALARM BOARD OPTION):
Used by the pressure switch on the ZPA board to get differential pressure between the enclosure & the external environment. The hose to the ZPA board is 1/8" blue.

⑥ EXHAUST ADJUSTMENT & EXHAUST ASSEMBLY:
The assembly is the point at which purge air exits the enclosure. The assembly also includes the adjustment which can control the internal pressure of the enclosure. When the control valve is set to "operate", adjust for a reading of 1" WC on the internal pressure meter.

⑦ FLOW METER:
Measures the amount of air which is entering the enclosure. The reading is taken from the middle of the silver ball. During purge, the flow should be 150 SCFH.

⑧ INTERNAL PRESSURE METER:
Reads the internal pressure of the enclosure. The dial on the meter is customized to read operate, over pressure & under pressure regions.
NOTES:

1. **Control Valve:** Adjusts the amount of air entering the enclosure with the purge/operate control. Switches the airflow into the enclosure from purge to operate.

2. **Internal Pressure Meter:** Reads the internal pressure of the enclosure. The dial on the meter is customized to read operate, over pressure & under pressure regions.

3. **Flow Meter:** Measures the amount of air which is entering the enclosure. The reading is taken from the middle of the silver ball. During purge, the flow should be 150 SCFH.

4. **Enclosure Air Input:** This is air input into the enclosure. The output of the flow meter is a 3/8" tube. The end of this tube is placed at the opposite corner from the exhaust assembly. This tube must be unobstructed.

5. **Exhaust Adjustment & Exhaust Assembly:** The assembly is the point at which purge air exits the enclosure. The assembly also includes the adjustment which can control the internal pressure of the enclosure. When the control valve is set to "operate", adjust for a reading of 1" wc on the internal pressure meter.

6. **Atmosphere Sense:** Used by the pressure switch on the YPA boards to get differential pressure between the enclosure & the external environment. The hose to the YPA board is 1/8" blue.

7. **Air Input for Y-Purge:** Attachment point for the enclosure's purge air or inert gas. The air source must be clean dry instrument grade air capable of supplying 35 to 150 SCFH at 30 - 100 PSI. The enclosure is purge after 10 minutes with a flow of 150 SCFH. After the purge is complete, the system will require only an amount of air enough to maintain the enclosure pressure at 1" wc.

8. **Spark Arrestor:** Prevents flame from exiting the enclosure.

9. **Regulator:** Adjusts the flow to 150 SCFH during purge.

---

**Dimensions are in Inches**

We Thrive in the Harshest Environments Voice: (717) 932-9999 FAX: (717) 932-8000 or Visit Us At www.daisydata.com SHEET 1 OF 1
OUTSIDE ENCLOSURE

Seal Nut, 3/4NPT
M390-000015

Breather, 3/4NPT
M390-000010

INSIDE ENCLOSURE

Check Valve, 0.5PSI, 3/4NPT
M390-000094

Coupling, 3/4NPT, F-F
M390-000050

Elbow, 3/4NPT, M-F
M390-000058

NOTES:

1. CHECK VALVE, 0.5 PSI:
   THE CHECK VALVE WILL OPEN IF THE INTERNAL PRESSURE IS GREATER THAN 0.5 PSI.
   THIS WILL PREVENT OVER PRESSURIZATION OF THE ENCLOSURE.

2. BREATHER:
   THE BREATHER ALLOWS AIR TO EXHAUST FROM THE ENCLOSURE, BUT DOES NOT ALLOW
   SPARKS TO EXIT THE ENCLOSURE.
TABLE 1

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<th>MODEL</th>
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<td>5971</td>
<td>350'</td>
</tr>
<tr>
<td>5972</td>
<td>400'</td>
</tr>
</tbody>
</table>

NOTES:
1. The 120 VAC power input connection is located on the inside rear wall in the upper left corner for all models shown. Include the connection pin-out of the 9 position terminal strip.
2. The Y-Forming alarm board is located on the center of the inside rear wall for all models shown. The Y-Forming alarm board is a wall-mounted unit. The cable can be up to 400 feet long. Use the pin-out from the supplied manual for this cable. The Y-Forming alarm board may be damaged if the pin-out is not followed.
3. Models with the "NO Y-Forming Installed" option require a customer supplied 9-pin plug RG59 video cable connected to the unit. The RG59 video input connection is located on the rear of the front door for all models shown. See Table 1 for the Daisy Data Y-Forming input cable model number & length.
4. The Y-Forming alarm board (033-000002-03) is located on the right side for all models shown. Contacts #1 & #2 can be wired normally open or normally closed. A six conductor cable is required.
5. For cable & conduit entry into the enclosure, refer to drawing "Pos2".
6. The air input fitting is a 1/4" NPT female. The air source must be clean dry instrument grade air capable of supplying 35 to 150 SCFM from 20 to 100 PSI.

Daisy Data Displays Inc.
2850 Lewisberry Road, York Haven, PA 17370

We thrive in the harshest environments. Voice: (717) 932-9999 FAX: (717) 932-8000 or visit us at www.daisydata.com

CONNECTIONS FOR REMOTE Y-PURGE ENCLOSURES

ELECTRICAL BLOCK DIAGRAM DRAWING

F010 REV.

SHEET 1 OF 1
NOTES:
1. THE 120 VAC POWER INPUT CONNECTION IS LOCATED ON THE INSIDE REAR WALL IN THE UPPER LEFT CORNER FOR ALL MODELS SHOWN. USE THE CONNECTION PHN-OUT OF THE 4 POSITION TERMINAL STRIP.
2. THE SIGNAL BOARD COMPUTER IS LOCATED ON THE CENTER OF THE INSIDE REAR WALL FOR ALL MODELS SHOWN. THE 15-700 BAGNET NETWORK IS STANDARD FOR ALL PCS. THE RUBBER CABLES CAN BE UP TO 328 FEET LONG.
3. SEE TABLE 1 FOR THE DFKY DATA CATS INPUT CABLE MODEL, NUMBER & LENGTH.
4. THE Y-PURGE ALARM BOARD (033-000002-03) IS LOCATED ON THE RIGHT SIDE FOR ALL MODELS SHOWN. RELAYS #1 & #2 CAN BE USED NORMALLY OR IN NORMAL CIRCUIT. A SIX CONDUCTOR CABLE IS REQUIRED.
5. FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "PO02".
6. THE AIR INPUT FITTING IS A 1/4" NPT FEMALE. THE AIR SOURCE MUST BE CLEAN DRY INSTRUMENT GRADE AIR CAPABLE OF SUPPLIES 150 TO 180 SCFM AT 20 – 100 PS.

TABLE 1

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<td>0342</td>
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DIMENSIONS ARE IN INCHES. Daisy Data Displays Inc. CONNECTION FOR LCD-PC Y-PURGED ENCLOSURES E013 - ELECTRICAL BLOCK DIAGRAM DRAWING WE THRIVE IN THE HARSHEST ENVIRONMENTS. PHONE: (877) 912-5999 FAX: (717) 912-8306 WEBSITE: www.daisydata.com SHEET 1 OF 1
NOTES:

1. PURGE AIR INLET:
   - THIS IS THE POINT THE PURGE AIR WILL ENTER THE ENCLOSURE. THE 1/4" TUBE
     SHOULD BE FREE OF DIRT & RINKS.

2. EXHAUST VALVE ASSEMBLY KIT:
   - THIS VALVE OPENS DURING PURGE TO EXHAUST THE PURGE AIR. ONCE THE PURGE IS
     COMPLETE, THE VALVE CLOSES & WILL NOT REOPEN UNLESS THE INTERNAL PRESSURE
     RISES ABOVE 6" WC.

3. ATMOSPHERE SENSE:
   - ALLOWS THE PRESSURE SENSOR ON THE PURGE CONTROL BOARD TO MEASURE THE
     DIFFERENTIAL PRESSURE BETWEEN THE ENCLOSURE & THE SURROUNDING ENVIRONMENT.

4. INTERNAL SIGNAL INTERFACE BOARD:
   - SEE DRAWING "E027" FOR DETAIL INFORMATION

5. PURGE CONTROL BOARD:
   - LOCATED UNDER THE RF SHIELD BOX. SEE DRAWING "E021" FOR DETAIL INFORMATION.

6. DIP SWITCH MOUNTING BOARD:
   - SEE DRAWING "E020" FOR DETAIL INFORMATION.

7. RF SHIELD BOX:
   - PROTECTS THE PURGE CONTROL BOARD FROM RF RADIATION THAT WOULD DISTORT THE
     PURGE SYSTEM.

8. POWER LID PAC SEAL:
   - THIS PAC SEAL CONTAINS THE AC POWER CABLE FOR THE INTERNAL EQUIPMENT, A 24V
     CABLE FOR THE SOLENOIDS & 3 DATA CABLES WITH 6 PINS IN EACH CABLE. THE PAC SEAL
     HAS THE SEALING COMPOUND ALONG ITS LENGTH & CAN NOT BE RE-POSITIONED.

9. LI PAC SEAL:
   - THIS PAC SEAL CONTAINS THE INTRINSICALLY SAFE POWER CABLE & THE ENCLOSURE REDUNDANT
     GROUND WIRE. THE PAC SEAL HAS THE SEALING COMPOUND ALONG ITS LENGTH
     & CAN NOT BE RE-POSITIONED.

10. PILOT AIR FEED:
    - THIS LINE PROVIDES THE PILOT PRESSURE FOR THE EXHAUST SOLENOID.
MODEL 4367: DIVISION 1 X-PURGE 20" FLAT PANEL INTEGRATED PC

- 120 VAC INPUT CABLE
- 10/100 BASE T NETWORK CABLE

MODEL 4567: DIVISION 1 X-PURGE 20" FLAT PANEL PC

- 120 VAC POWER SUPPLY, 310W

NOTES:
- MODEL 4367 HAS THE KEYBOARD & POINTING DEVICE INSTALLED.
- MODEL 4567 DOES NOT INCLUDE THE KEYBOARD & POINTING DEVICE.
- THE MEMBRANE KEYBOARD IS STANDARD. OPTION #736 ADDS THE ELASTOMERIC KEYBOARD PART NUMBER 1301-000021-01, WITH 10-CONDUCTOR CABLE.
- THE STANDARD CPU SPEED, MEMORY, HARD DRIVE & CD ROM DRIVE, WILL CHANGE WITH THE LATEST TECHNOLOGY. PLEASE REFER TO YOUR SYSTEM CONFIGURATION FORM.
- FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "POE".
- SEE TABLE 1 FOR THE DAISY DATA CATS INPUT CABLE MODEL NUMBER & LENGTH.

TABLE 1

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<tr>
<td>8590</td>
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NOTES:

1. JA: JA IS CONNECTED TO J13 ONE TO ONE. SEE THE SSB-SIB CONNECTION TABLE FOR A MORE DETAILED PIN-OUT. J13 IS CONNECTED TO JA ON THE INTERNAL SIGNAL INTERFACE BOARD THROUGH THE PAC-SEAL.

2. JB: JB IS CONNECTED TO J12 ONE TO ONE. SEE THE SSB-SIB CONNECTION TABLE FOR A MORE DETAILED PIN-OUT. J12 IS CONNECTED TO JB ON THE INTERNAL SIGNAL INTERFACE BOARD THROUGH THE PAC-SEAL.

3. JC: JC IS CONNECTED TO J13 ONE TO ONE. SEE THE SSB-SIB CONNECTION TABLE FOR A MORE DETAILED PIN-OUT. J3 IS CONNECTED TO JC ON THE INTERNAL SIGNAL INTERFACE BOARD THROUGH THE PAC-SEAL.

4. TO INSERT WIRES INTO THE CONNECTORS SUPPLIED AT JA, JB & JC, STRIP THE WIRE INSULATION OFF 1/4" & TIN. UNSCREW THE TERMINAL UNTIL THE WIRE WILL FIT IN & SCREW TILL THE WIRE IS SECURE.

5. J7: SHORT WHEN NET3 (J5) IS USED FOR ARCNET.

6. J15 & J16: SHORT BOTH WHEN NET1 (J6) & NET2 (J4) ARE USED FOR THINNET.

7. J1 & J2: FOR ARCNET NETWORK LOOPBACK. CONSULT FACTORY FOR MORE INFORMATION.
NOTES:

1. **JA**: JA is connected to J13 one to one. See the SSB-SIB connection table for a more detailed pin-out. J13 is connected to JA on the signal switching board though the PAC-SEAL.

2. **JB**: JB is connected to J12 one to one. See the SSB-SIB connection table for a more detailed pin-out. J12 is connected to JB on the signal switching board though the PAC-SEAL.

3. **JC**: JC is connected to J13 one to one. See the SSB-SIB connection table for a more detailed pin-out. J3 is connected to JC on the signal switching board though the PAC-SEAL.

4. To insert wires into the connectors supplied at JA, JB & JC, strip the wire insulation off 1/4" & tin. Unscrew the terminal until the wire will fit in & screw till the wire is secure.

**1052-000000**
INTERNAL SIGNAL INTERFACE BOARD
## SIGNAL SWITCHING BOARD and INTERNAL SIGNAL INTERFACE BOARD CONNECTIONS

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</table>

Grey shaded connections are terminated by D.D.

Green shaded wires are the regular twisted pairs

Blue shaded wires are CAT5 cables

Red shaded wires are hook-up wire

ssb-sib with cat5.xls
NOTES:

1. **BYPASS PURGE:**
   - *This test must be done in a safe environment!** ByPass Purge is for test only!
   - The Purge Control System is completely bypassed & the isolation relays close immediately, applying power & signals to any connected internal electronics.
   - The Purge Status LED on the front panel will be illuminated Flashing green. No Purge Air is required. Remove Main AC Power. Press & hold the ByPass Purge Switch & apply Main Power in to the XPI Board (see Notes 1 & 4 on Drawing "E017"). Then release the switch within 30 seconds. Now the unit is in byPass Purge.
   - The unit's internal environment will not be safe unless a normal purge cycle is done.

2. **SHORT PURGE SWITCH:**
   - *This test must be done in a safe environment!** Short Purge is for test only.
   - The Purge Control System will set the Purge Time to 30 seconds regardless of the setting on the enclosure size select dip switches. The Purge will then continue as normal. The Purge Status LED will be illuminated green. Purge Air is required. Remove Main AC Power In. Press & hold the Short Purge Switch & apply Main Power In to the XPI Board (see Notes 1 & 4 on Drawing "E017"). Then release the switch within 30 second. Close the switch cover & the enclosure door. Apply Air to the Purge System. The unit is now operating normally.
   - The unit's internal environment will not be safe unless a normal purge cycle is done.

3. **ENCLOSURE SIZE DIP SWITCHES:**
   - The dip switches control the timing of the normal purge cycle. For both the 15" & 18" display models the Purge Time will be 8 minutes. The follow are the correct settings of the Switches.
     1. OFF
     2. OFF
     3. ON
     4. OFF
     5. ON
     6. ON
     7. ON
     8. ON

---

**Daisy Data Displays Inc.**

2850 Lewisberry Road, York Haven, PA 17370

**Electrical Block Diagram Drawing**

**DIP Switch Mounting (DMB) Board Item Location**

**Drawing Number**

**E020**

**Revision**

**B**

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**Sheet 1 of 1**
NOTES:

1. **EPROM:**
   - This is the factory supplied EPROM with the software for the purge system.

2. **JUMPER SETTINGS:**
   - All jumpers are set at the factory! Do not change!

3. **FLOW & PRESSURE ADJUSTMENTS:**
   - All potentiometers are set at the factory! Do not change!

4. **FLOW SENSOR:**
   - This is the sensor that measures the air flow into the enclosure. The red hose is connected to port "A".

5. **PRESSURE SENSOR:**
   - This is the sensor that measures the air pressure inside of the enclosure. The blue hose is connected to port "A".

1068-000001-01
PURGE CONTROL BOARD
NOTES:

1. All input connections are located on two PCB's in the explosion proof aluminum box on the top of the unit. The 120 VAC power input connection is on the XPI board (0315-0000-0000). The alarm relay connection is also on the XPI board. A three conductor cable is required.

2. The data signal inputs connections are on the SSB board (0315-000900). The CATS cards, data cable can plug into cable 0503-001347-01 which is supplied with the unit.

3. The REMOTE KVM Receivers are located on the center of the inside rear wall for all models shown. The KVM Receiver Input Data Cable is a 4-1/4' CATS cable. This cable can be up to 400 feet long.

4. Use one of the three cables shown, see Manual for the cable. The XPI Receiver may be damaged if the EMI data is not followed.

5. See Table 1 for the CATS input cable model number & length.

6. For cable & conduit entry into the enclosure, refer to drawing "00177".

7. The Air Input fitting is a 1/4" NPT female. The Air Source must be clean dry instrument grade air capable of supplying 40 to 300 SCFH at 50 to 80 PSI.

8. Models with the "No KVM Installed" option require three wires to connect to the three wires (Red, Green & Blue) on the SSB board.

TABLE 1

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<td>0512</td>
<td>400'</td>
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Daisy Data Displays Inc.

Dimensions are in inches

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Daisy Data Displays Inc.  REMOTE DIV. 1 X–PURGE 18” ENCLOSURE.
2850 Lewisberry Road, York Haven, PA 17370
ELECTRICAL BLOCK DIAGRAM DRAWING
EO24
REV. D

We Thrive in the Harshest Environments Voice: (717) 932-9999 FAX: (717) 932-8000 or Visit Us At www.daisyydata.com SHEET 1 OF 1

NOTES:
1. MODEL 2665 HAS THE KEYBOARD & POINTING DEVICE INSTALLED.
2. MODEL 2565 DOES NOT INCLUDE THE KEYBOARD & POINTING DEVICE.
3. THE MEMBRANE KEYBOARD IS STANDARD, OPTION #739 ADDS THE ELASTOMETRIC KEYBOARD PART NUMBER 1501-000018, WITH PCB # 1024-000004-04.
4. SEE TABLE 1 FOR THE DAISY DATA CATS INPUT CABLE MODEL NUMBER & LENGTH.
5. FOR CABLE & CONDUIT ENTRY INTO THE ENCLOSURE, REFER TO DRAWING "PO01."
NOTE:

1. KEYPAD LAYOUT:
   This is the standard layout of the keypad. For special layouts, please contact Daisy Data.
NOTES ON THE KEY FUNCTIONS:

1. **ON SCREEN DISPLAY PURPOSE:**
The O.S.D. buttons control the brightness, contrast and screen geometry of the image on the display.

2. **SELECT:**
Selects an item from the menu.

3. **+**:
Moves to the right item in the menu, or moves the hi-light bar right. The value of the selected item increases.

4. **-**:
Moves to the left item in the menu, or moves the hi-light bar left. The value of the selected item decreases.

5. **Menu**
Opens and closes the O.S.D. menu.

---

**DIMENSIONS ARE IN INCHES**

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2850 Lewisberry Road, York Haven, PA 17370

ELECTRICAL BLOCK DIAGRAM DRAWING

ON SCREEN DISPLAY KEYPAD LAYOUT

DRAWING NUMBER: E097

REV. A

We Thrive in the Harshest Environments  Voice: (717) 932-9999  FAX: (717) 932-8000  or Visit Us At www.daisydata.com  SHEET 1 OF 1
DOOR
1640-001561-01

INVERTER
P070-000512

15" LCD
P000-000119

LVDS
P070-000574

DSO CABLE
1100-001950

VGA CABLE
P070-000398

VIDEO CARD POWER
1100-001879

VIDEO CARD
P050-000245

ENCLOSURE
1640-001598

FANS
1640-001435

FAN POWER
1100-000396-01

AC LINE
1100-001592

DC POWER
1640-001598

12V SUPPLY
P010-000050

PDB
1047-100050

PDB CABLE
100-001333-01

POWER BIN
1100-001833-01

TERMINAL STRIP
1640-001168

AC LINE
1100-001610

24V Supply
P010-000046

KVM
P070-000559

KVM POWER
1100-001591

KEYBOARD
1640-001513

TRACKBALL
P040-500006-01

ICK BOARD
1024-000015-01

ICK CONTROL
1100-001830-01

TRBL CONTROL
P070-000506

KEYBOARD
1301-000030

POWER/LED
1100-001856

DSO & POWER/LED
P070-000513-01

TRBL BUTTONS
P070-000507

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NOTES:
1. MODELS 2723KB & 2726KB HAVE THE KEYBOARD & POINTING DEVICE INSTALLED.
2. MODELS 2723 & 2726 DO NOT INCLUDE THE KEYBOARD & POINTING DEVICE.
3. SEE TABLE 1 FOR THE DIXY DATA CABLES INPUT CABLE MODEL NUMBER & LENGTH.
4. IF A KEYBOARD IS NOT AVAILABLE, IT IS RECOMMENDED TO USE THE KEYBOARD FROM THE NEAREST COMPARABLE MODEL.
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MODEL 4576AA: NEMA 4X NON-INCENDIVE PANEL MOUNT FLAT PANEL INTEGRATED 19" PC

NOTE:
1. SEE TABLE 1 FOR THE DASH DATA CABLE INPUT CABLE
2. THE STANDARD CPU SPEED, MEMORY, HARD DRIVE & CD ROM DRIVE WILL CHANGE WITH THE LATEST TECHNOLOGY. PLEASE REFER TO YOUR SYSTEM CONFIGURATION FORM.
CLEARANCE HOLE FOR 1/2" CONDUIT
4 PLACES

TOLERANCES
DIMENSIONS ARE
IN INCHES

FRACTIONS
± 1/32"

DECIMALS
.XX = ± .03
.XXX = ± .015

ANGLES
± 1'

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NOTES:

1. THE STANDARD CPU SPEED, MEMORY, HARD DRIVE & CD-ROM DRIVE WILL CHANGE WITH THE LATEST TECHNOLOGY. PLEASE REFER TO YOUR SYSTEM CONFIGURATION FORM.

2. SEE TABLE 1 FOR THE DAISY DATA CATS INPUT CABLE MODEL NUMBER & LENGTH.