DC9410-Series Control Room Furniture

Overview

The DC9400-Series Operator Workplace provides solutions used by process plant operators to control the process and interface with plant information systems. These products include:

- DC9410-Series Control Room Furniture
- DC9500 WS-Series Console Electronics
- DC9430-Series X-Terminal Operator Stations
- DH6040-Series Process Network Communications Products
- Type DC6482 Console Logging Unit
- Type DC9486 Network Color Printer

- Type CP9411 System Cabinet

The Operator Workplace is more than a control system user interface, it provides a flexible set of tools that can be used to create an efficient and productive environment for all control room activities. The Operator Workplace provides an easy to use process control user interface with easy access to the plant network applications.

The user interface consists of console electronics, operator stations, and X-Terminal Operator Stations. The DC9410-Series Control Room Furniture provides a modular furniture system that supports the mounting of all Operator Workplace products and also provides the ability to design the work environment to fit the particular needs of the control room.

Figure 1  Typical Operator Workplace Using DC9410-Series Control Room Furniture

Note: Numbers shown as (XX) in text refer to callouts on Figure 1.
DC9410-Series Control Room Furniture

The DC9410-Series Control Room Furniture is unique in its approach to solving the electronics packaging requirements of the control room. It combines the usability and flexibility of office furniture systems with the specific requirements of the control room.

These requirements include placement of VDU’s, electronics and instrumentation mounting, and control room environment. This step beyond traditional console packaging, provides the ability to meet the needs of all activities in the control room.

This product provides a modular system of control room furniture, component assemblies and accessories that allow flexible and customized design of the control room. The furniture is manufactured of heavy aluminum extrusions and castings capable of withstanding the treatment it may be subjected to in the control room environment. Figure 1 shows an example of how these products may be used to design a control room work environment.

In addition, the DC9410-Series products provide advanced ergonomic design. These features include adjustable height worksurfaces, contoured worksurfaces, VDU mounting that provides full adjustability in the X–Y–Z planes. The design of this product line meets or exceeds all ergonomic guidelines set by the EEC, DIN, and other regulatory institutions.

Control Room Furniture Overview

The DC9410-Series product line includes a variety of worksurfaces, wall assemblies, and accessories that can be used to meet most work space requirements. The DC9410-Series Control Room Furniture includes a choice of three wall units. The purpose of the wall units are to provide work space partitions, monitor mounting, and panel area for mounting of user-supplied instrumentation (emergency shutdown buttons, etc.).

Three wall assemblies which make up the backbone of the control room furniture consist of low Figure 2, standard Figure 4, and high Figure 5, wall units which range from desktop level to units of sufficient height to accommodate stacked monitor assemblies.

The DC9410-Series Control Room Furniture products includes different worksurfaces to maximize the flexibility with which the control room work environment can be designed. The worksurfaces include ergonomically-designed contours that provide narrow portions of the worksurface for easy access to wall mounted devices and wider portions to provide extra work space and leg room for the operator when sitting at the keyboard. Curved worksurfaces are also designed to facilitate verbal communications. By placing operators on opposite sides of the curvature, it is easy to communicate face-to-face.

These wall assemblies also provide for front and rear access, rear mounting of electronics enclosures (17) and panel/rack mounting of user-supplied instrumentation (3).

Walls interconnect using a joining kit that provides the hardware necessary to attach a wall to an adjacent wall. Horizontal slots, strategically placed at top, bottom and middle of wall frames accommodate a lip that is an integral part of some assemblies and accessories. These slots are the means by which panels and accessories mount to wall assemblies. This slot and lip arrangement simplifies the installation process and allows ease of access to wiring and components attached to wall units.

Vertical wireways (11), mounted at the termination of a wall unit or corners, provide wiring access to and from the control room area. The internal vertical and horizontal structure of the wall units are perforated to permit routing of internal wiring. Rubber grommets, located in the frame at worksurface level, provide entrance and exit points for cables to access desktop devices. Wiring is accessed by removing front or rear panels. AC power is provided using utility power strips, which provide outlets for locally mounted instrumentation.

Wing walls (10), which are attached to terminating walls only, are used for both stability and aesthetics on high wall assemblies. Wing walls are not required for stability on low and standard height wall units.

Worksurface assemblies (12) attach to adjustable pedestals (13) allowing the worksurface to be positioned at an optimum height for use as a desk or as a place to position desktop equipment. Worksurfaces may optionally be supported by file cabinets.
Type DC9411 Low Wall Unit

The Type DC9411 Low Wall Unit (7), is best suited for applications where the operator is required to view areas beyond his immediate work area. Figure 2 shows the available low wall configurations. A platform for mounting a desktop monitor and an enclosure for rack-mounted instrumentation is also available.

Mounting the monitor (5) on the platform (6) elevates the monitor and provides more usable space on the worksurface. Monitor platforms provide front-to-back adjustment, but are not height adjustable. Additional tilt and swivel is provided by the base of the monitor itself. Refer to Figure 3.

An electronics enclosure (17) to house the console electronics unit is available for mounting on the rear of low wall unit. The console electronics may be mounted in the enclosure or remote in a system cabinet.

The low wall unit may be used with The Type DC6431 PROVUE® Operator Interface Units, Type DC9431 or DC9433 X-Terminal Operator Stations.

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*Figure 2  Available Low Wall Configurations*

- **Basic**
  - Height: 31.8 in (808 mm)
  - Front to Back Adjustment: 29.5 in (750 mm)

- **With Monitor Platform**
  - Height: 13.4 in (340 mm)
  - Tilt: 4.9 in (125 mm)

- **With Electronics Enclosure**
  - Height: 31.5 in (800 mm)
  - Tilt: 22.4 in (569 mm)

- **With Monitor Platform and Electronics Enclosure**
  - Height: 4.9 in (125 mm)

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*Figure 3  Low Wall with Monitor Platform*

Front to Back Adjustment

Max height 31.5 inches (800 mm)
Min height 26.25 inches (667 mm)
Total height adjustment 5.25 inches (133 mm)
Type DC9412 Standard Wall Unit

The Type DC9412 Standard Wall Unit (4) may be used as a partition to separate work areas, for locating panel mounted instrumentation (3), or for wall mounting of a monitor (2). Figure 4 shows the available standard wall configurations.

This wall may be used with the Type DC6432 PROVUE Operator Interface Units, or Type DC9432 or DC9434 X-Terminal Operator Stations.

Electronic enclosures (17) for housing console electronics may be mounted on the lower or upper sections of the wall (1).

Figure 4 Available Standard Wall Configurations
The lower panel of the standard wall unit is high pressure plastic laminate over a medium density composite core. The upper panel may be Forbo or laminate. Forbo is a self-healing cork-like material suitable for posting operating instructions or messages. If user-supplied instrumentation is to be panel mounted in the upper wall panels, use only the laminate panels.

Monitor enclosures mount to the wall assemblies. The monitor has tilt and swivel, in/out, and raise/lower adjustment to increase accessibility and viewing range for the user. Refer to Figure 6.

**Type DC9413 High Wall Unit**

The Type DC9413 High Wall Unit (8,9) may be used as a partition to separate work areas, for mounting panel mounted instrumentation, or for wall mounting of one or two monitors. Single monitor mounting is limited to the middle section of the wall unit. Figure 5 shows typical high wall configurations.

The single monitor has tilt/swivel, in/out, and height adjustment to increase accessibility and viewing range for the user. There is no height adjustment when two monitors are installed. Refer to Figure 6.
Figure 5  Available High Wall Configurations

Figure 6  Standard Wall Monitor Enclosure and High Wall W/Single Monitor Lift Assembly
This wall may be used with Type DC6432 PROVUE Operator Interface Units or Type DC9432 X-Terminal Operator Stations.

Electronic enclosures (17) for housing console electronics may be mounted on the lower and middle sections of the wall. The lower panel of the high wall unit is laminate. The middle and upper panel may be Forbo or laminate. If user-supplied instrumentation is to be mounted in the upper wall panels, use only the laminate panels.

**Type DC9414 Worksurfaces**

Different worksurfaces are available to maximize the flexibility of designing the control room work environment. The worksurfaces are of varying shapes to provide ease of access to keyboards and wall mounted devices and provide flexibility in control room layout. Figure 7 and Figure 8 shows available worksurfaces.

Worksurfaces include pedestal supports (13) with an optional foot rest shown in Figure 10. Worksurfaces are mounted to the pedestal platform which is the primary support for the wall and the worksurface. The pedestal support anchors to the bottom of the wall unit and a heavy duty cast aluminum bracket beneath the pedestal platform attaches to a slot in the wall frame. A handwheel located within easy reach under the worksurface permits manual height adjustment of the worksurface.

File cabinets as an alternative to pedestals are available for optional mounting of worksurfaces. They provide additional storage without consuming valuable floor space. A bracket is supplied with this option to facilitate mounting of the worksurface. If the file cabinet option is used, one cabinet is required for each wall section; i.e. a double worksurface will require two file cabinets. To ensure overall stability, every other worksurface must be supported with a pedestal. This option does not provide height adjustment.

Worksurfaces are available in three lengths; single, double and corner as shown in Figure 7 through Figure 9. Single worksurfaces are one wall unit in length and are supported by a pedestal or an optional file cabinet.

![Single Terminate, Left](image1)

**Note:** Single worksurfaces include a pedestal support. A file cabinet support is optional.

![Single Terminate, Right](image2)

![Double, Straight](image3)

**Note:** Double worksurfaces include two pedestals for support. Two file cabinet supports are optional.

*Figure 7  Available Worksurface Configurations*
Although not required, single termination (left and right) (16) are generally used to terminate the work area. They provide additional work area and add symmetry to the operator workplace.

Double worksurfaces are two wall units in length and are supported by two pedestals or two optional file cabinets.

Operator stations should generally be located on double worksurfaces with curvatures (14) since these will provide additional work space and leg room.

The double straight unit would generally be used as a filler between work areas. It would not normally be used as an operator station.

The corner worksurface provides a ninety degree angle and occupies the space of four wall units. The corner worksurface is supported by two pedestals. A corner kit is required to connect the wall units at the 90 degree angle. A maximum of two monitors can be mounted in this configuration. Refer to Figure-13.

All worksurfaces are constructed from high pressure plastic laminate over phenolic and are capable of withstanding the rigors of a control room environment.

Figure 12 and Figure 13 shows examples of control room layout.

Note: Single worksurfaces include a pedestal support. A file cabinet support is optional.

Note: Double worksurfaces include two pedestals for support. Two file cabinet supports are optional.

Figure 8 Available Worksurface Configurations
Note: Double worksurfaces include two pedestals for support. Two file cabinet supports are optional. The corner worksurface includes two pedestal supports.

Figure 9 Available Worksurface Configurations

Figure 10 Miscellaneous Component Parts
Figure 11  Miscellaneous Component Parts (Continued)

Figure 12  Standalone Station and Two Station Examples
Additional Planning Information

The following information should be referred to when planning a DC9400-Series Operator Workplace.

- Wing walls and vertical wireways are to be used on terminating walls only.
- Wing walls are used for both stability and aesthetics on high wall assemblies. They are optional on low or standard walls.
- Double straight worksurfaces are not intended to be used for monitor workstations.
- Cable entry ports are provided in the corners and vertical wiring trays located on terminating ends.
- If file cabinet option is used for mounting worksurfaces, one cabinet is required for each wall section; i.e. a double worksurface will require two file cabinets.
- Monitor platforms used on low walls can swivel, but are not height adjustable.
- If user-supplied instrumentation is to mounted in wall panels, use only the laminated panels.
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walls</strong></td>
<td><strong>Interior</strong>: 30.5 inches (775 mm) wide x 21.9 inches (558 mm) high x 13 inches (330 mm) deep</td>
</tr>
<tr>
<td>Low Wall: 31.8 inches (808 mm) wide x 29.5 inches (750 mm) high x 4.9 inches (125 mm) deep. 70 pounds (31.8 kg)</td>
<td><strong>Electronics Enclosure (Upper)</strong>:</td>
</tr>
<tr>
<td>Standard Wall: 31.8 inches (808 mm) wide x 59 inches (1500 mm) high x 4.9 inches (125 mm) deep. 130 pounds (59 kg)</td>
<td>Exterior: 31.5 inches (800 mm) wide x 30 inches (759.5 mm) high x 13.4 inches (340 mm) deep. 34 pounds (15.4 kg)</td>
</tr>
<tr>
<td>High Wall: 31.8 inches (808 mm) wide x 80.25 inches (2038 mm) high x 4.9 inches (125 mm) deep. 190 pounds (86 kg)</td>
<td>Interior: 30.5 inches (775 mm) wide x 29.5 inches (749.3 mm) high x 13 inches (330 mm) deep</td>
</tr>
<tr>
<td><strong>Work Surfaces</strong></td>
<td>Top Panel, High Wall: 31.5 inches (800 mm) wide x 19.7 inches (500 mm) high x 0.78 inches (20 mm) thick</td>
</tr>
<tr>
<td>Single Terminate, Left: 25.5 inches (648 mm) wide x 30.8 inches (783 mm) long x 0.59 inches (15 mm) thick. 25 pounds (11.3 kg)</td>
<td>Upper Panel, Standard or High Wall: 31.5 inches (800 mm) wide x 30 inches (759.5 mm) high x 0.78 inches (20 mm) thick</td>
</tr>
<tr>
<td>Single Terminate, Right: 25.5 inches (648 mm) wide x 30.8 inches (783 mm) long x 0.59 (15 mm) thick. 25 pounds (11.3 kg)</td>
<td>Lower Panel, Standard or Low Wall: 31.5 inches (800 mm) wide x 21.7 inches (552 mm) high x 0.78 inches (20 mm) thick</td>
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<tr>
<td>Double Straight: 23.6 inches (600 mm) wide x 62.7 inches (1591 mm) long x 0.59 inches (15 mm) thick. 53 pounds (24 kg)</td>
<td>Wing Wall:</td>
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<tr>
<td>Double Interior, Left: 27.7 inches (704 mm) wide x 62.7 inches (1591 mm) long x 0.59 inches (15 mm) thick. 55 pounds (25 kg)</td>
<td>Low: 23.6 inches (600 mm) wide x 29.5 inches (750 mm) high x 1.3 inches (33 mm) thick</td>
</tr>
<tr>
<td>Double Interior, Right: 27.7 inches (704 mm) wide x 62.7 inches (1591 mm) long x 0.59 inches (15 mm) thick. 55 pounds (25 kg)</td>
<td>Standard: 23.6 inches (600 mm) wide x 59 inches (1500 mm) high x 1.3 inches (33 mm) thick</td>
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<tr>
<td>Corner: 61 inches (1548.5 mm) wide x 61 inches (1548.5 mm) long x 0.59 inches (15 mm) thick. 110 pounds (50 kg)</td>
<td>High: 23.6 inches (600 mm) wide x 80.25 inches (2038 mm) high x 1.3 inches (33 mm) thick</td>
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<tr>
<td><strong>Miscellaneous</strong></td>
<td>Pedestal with foot rest, 76 pounds (35 kg) Pedestal without foot rest, 38 pounds (22 kg)</td>
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<tr>
<td>Electronics Enclosure (Lower):</td>
<td><strong>Corner Kits</strong>:</td>
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<tr>
<td>Exterior: 31.5 inches (800 mm) wide x 22.4 inches (568 mm) high x 13.4 inches (340 mm) deep. 31 pounds (14 kg)</td>
<td><strong>Low wall</strong>: 29.5 inches (750 mm) high x 7.3 inches (185 mm) wide, 8 pounds (3.6 kg)</td>
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### Specifications

<table>
<thead>
<tr>
<th>Miscellaneous (Continued)</th>
<th>Standard wall: 59 inches (1500 mm) high x 7.3 inches (185 mm) wide, 16 pounds (7 kg)</th>
<th>Electro-Magnetic Compatibility Notes:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>High wall: 80.25 inches (2038 mm) high x 7.3 inches (185 mm) wide, 24 pounds (11 kg)</td>
<td>Complies with European Standards EN55022 Class A and EN50082-1:1992</td>
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<tr>
<td></td>
<td><strong>Vertical Wireways:</strong> Low wall 8 pounds (3.6 kg) Standard wall 16 pounds (7 kg) High wall 24 pounds (11 kg)</td>
<td>Wall frame with electronics enclosure is 18.3 inches (464 mm) deep</td>
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<td></td>
<td>File Cabinet: 24.4 inches (620 mm) high x 18.5 inches (420 mm) wide x 23.6 inches (600 mm) deep. 80 pounds (36.3 kg). Bracket for mounting worksurface to file cabinet is 4 inches (470 mm) high. 4 pounds (1.8 kg)</td>
<td>Distance between largest worksurface outer edge and wall frame is 30 inches (761 mm)</td>
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<td></td>
<td>To provide access it is recommended that 36 inches (914 mm) be left between wall units and any permanent wall.</td>
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### Ordering Information

**When ordering, specify —**

#### DC9410-Series Control Room Furniture

- **Type DC9411 Low Wall:**
  - Base product includes wall frame assembly with laminate panels front and rear and wall/wall joining kit. Options include:
    - Adjustable monitor platform
    - Rear mounted electronics enclosure
    - Vertical wireway
    - Termination kit
    - Corner joining kit
    - Wing wall
    - Power distribution strip

- **Type DC9412 Standard Wall**
  - Base product includes wall frame assembly with laminate panels front and rear on lower and upper wall sections and wall/wall joining kit. Options include:
    - Monitor lift assembly
    - Lower rear mounted electronics enclosure
    - Upper rear mounted electronics enclosure
    - Forbo upper front panel
    - Vertical wireway
    - Termination kit
    - Corner joining kit
    - Wing wall
    - Power distribution strip

- **Type DC9413 High Wall**
  - Base product includes wall frame assembly with laminate panels front and rear on lower, middle, and upper wall sections and wall/wall joining kit. Options include:
    - Monitor lift assembly (middle section) single monitor only
    - Monitor support assembly (middle and upper section) for dual monitors
    - Lower rear mounted electronics enclosure
    - Middle rear mounted electronics enclosure
    - Forbo front panel (middle and upper sections)
Vertical wireway
Termination kit
Corner joining kit
Wing wall
Power distribution strip

Type DC9414 Worksurfaces
Base product includes worksurface with pedestal.
Options include:
- Single, left w/pedestal or file cabinet
- Single, right w/pedestal or file cabinet
- Single, straight w/pedestal or file cabinet
- Single terminate, left w/pedestal or file cabinet
- Single terminate, right w/pedestal or file cabinet
- Double terminate, left w/pedestal or two file cabinets
- Double terminate, right w/pedestal or two file cabinets
- Double, straight w/pedestal or two file cabinets
- Double interior left, w/pedestal or two file cabinets
- Double interior right, w/pedestal or two file cabinets
- Corner w/two pedestals

Assembly Services
- None (standard)
- Factory Assembly (optional)