



台達電子工業股份有限公司

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CNC 數值控制器 CNC 数值控制器 CNC Controller CNC Kontrol Cihazı

NC300系列 安裝手冊

NC300系列 安裝手冊

NC300 Series Quick Start

NC300 Serisi Kullanım Klavuzu



感謝您購買本產品，在使用之前，請詳讀本手冊以正確使用產品；請將本手冊放置在明顯的地點以便隨時查閱。在您尚未讀完本手冊前，請務必遵守下列事項：

- 安裝的環境必須沒有水氣、腐蝕性氣體及可燃性氣體。
- 接線時，請依 NC 系列操作維護手冊中的端子定義圖說明進行施工，並請確實實施接地工程。
- 通電時，請勿拆解控制器或更改配線，勿接觸電源處，以免觸電。

如果您在使用上仍有問題，請洽詢經銷商或者本公司客服中心。內容規格有所修正時，本公司將不另行通知，請洽詢代理商或至台達網站 (<http://www.delta.com.tw/ia/>) 下載最新版本。

安全注意事項

安裝注意



- 請依照手冊指定的方式安裝控制器，否則可能導致設備損壞。
- 禁止將本產品暴露在有水氣、腐蝕性氣體、可燃性氣體等物質的場所中使用，否則可能會造成觸電或火災。

配線注意



- 請將接地端子連接到 class-3 (100 Ω 以下) 接地，接地不良可能會造成通訊異常、觸電或火災。

設備運轉前注意



- 請先使用 MLC 編輯軟體正確地規劃 I/O 動作，否則可能導致運轉異常。
- 機械設備運轉前須適當調整參數，否則將造成運轉異常或故障。
- 請確認緊急停止開關動作是否正常，避免在無保護的狀態下運轉設備。

操作注意



- 禁止在開啟電源時改變配線，否則可能造成人員觸電受傷。
- 請勿以尖銳物品碰觸面板，否則可能導致面板凹陷，而導致控制器無法正常運作。

保養及檢查



- 電源啟動時，請勿拆下控制器面板或接觸控制器內部，否則會造成觸電。
- 電源關閉 10 分鐘內，不得接觸接線端子，殘餘電壓可能造成觸電。
- 更換備用電池前應先行切斷電源，並在更換後重新檢查系統設定值。
- 操作控制器時不可封住排氣孔，散熱不良易導致控制器故障。

配線方法



- 電源：請正確供應控制器 24V 直流電源，並遵照線材規格配線，以免發生危險。
- 線材選用：所有訊號線請採用多股及多芯絞合線整體隔離。
- 配線長度：除了 REMOTE I/O 與 DMCNET 訊號線最長為 20m，其餘訊號線長度最長為 10m。
- 本機 I/O 與遠端 I/O 需要另外配接 24V 直流電源，才可正常輸出入訊號。

通訊電路的配線



- DMCNET 接線：請依標準規格採用通訊配線線材。
- 請確保控制器與驅動器的接線無鬆脫情形，否則將導致運轉異常。

產品檢查

為了防止本產品在購買與運送過程中的疏忽，請詳細檢查下表所列出的項目：

| 檢查項目 | 內容 |
|----------|-----------------------|
| 是否為購買的產品 | 檢查控制器銘板上的型號，請參閱產品型號說明 |
| 按鍵開關 | 用手按壓各按鍵，按鍵觸感應該平順。 |
| 外觀 | 目視檢查外觀損傷 |
| 連接器 | 是否有連接器鬆脫或未固定的狀況 |

如果發生任何上述情形，請與代理商聯絡以獲得妥善的解決。

NC 系列控制器可搭配伺服驅動器

搭配台達 ASDA-A2 與 ASDA-M 系列伺服驅動器，適用型號：ASD-A2-□□□□-N、ASD-A2-□□□□-NN 與 ASD-M-□□□□-F、ASD-A2-□□□□-F，詳細規格請參閱 ASDA-A2 與 ASDA-M 系列使用手冊。

產品型號說明

NC300A - MI - A
(1) (2)(3) (4)

(1) 名稱

NC200 : 3 軸 8 吋控制器

NC300 : 3 軸 8 吋控制器

NC310 : 3 軸 10 吋橫式控制器

NC311 : 3 軸 10 吋直式控制器

(2) 機種

M : 雕銑控制器

(3) 型式

I : 一體式(機身包含第一面板和第二操作面板)

S : 分離式(機身不含第二操作面板)

(4) 版本

A : 標準版

AE : 英文版

產品配件

| 產品配件 | NC300A-MI-A_ | NC300A-MS-A_ NC311A-MS-A_ NC310A-MS-A_ | NC200A-MI-A_ | 用途 |
|--------------------------|--------------|--|--------------|----------------------------------|
| 3-PIN 接頭 1 個 | • | • | • | 電源 24 V _{DC} |
| 終端電阻 1 個 | • | • | • | DMCNET |
| M3 螺絲及螺帽 8 組 | • | • | • | 安裝於機台使用 |
| 15-PIN 公接頭 及其配件 2 組 | • | • | | 於 MPG 及 SPINDLE 使用 |
| 15-PIN 公、母接頭 及其配件 2 組 | | | • | 於 MPG 及 SPINDLE 使用 |
| 15-PIN 母接頭 及其配件 1 組 | • | • | | 於 AXIS 使用 |
| 5-PIN 接頭 1 個 | | | • | 於第二面板 X 輸出接點使用 |
| 3-PIN 接頭 1 個 | | | • | 於第二面板 Y 輸出接點使用 |
| 6-PIN 接頭 2 個 | | | • | 於 HSI 及 REMOTE I/O 使用。*1 |
| 2-PIN 接頭 1 個 | •*2 | | •*3 | 供給第二面板 24 V _{DC} 電源輸入使用 |

註：

1. HSI：高速 G31 與外部緊急停止輸入介面；REMOTE I/O：高速串列 I/O。
2. 供給第二面板的程式啟動、程式停止按鈕使用。
3. 供給第二面板上的 I/O 使用。

儲存環境條件

本產品在安裝之前必須置於其包裝箱內。若暫時不使用，為了使該產品能夠符合本公司的保固範圍及日後的維護，儲存時務必注意下列事項：

- 儲存必須置於無塵垢、乾燥之位置，最好適當包裝存放在架子或檯面。
- 儲存的環境溫度必須在 $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 140^{\circ}\text{F}$) 範圍內。
- 儲存位置與工作環境的相對濕度必須在 10%到 95%範圍內，且無結露。
- 避免儲存於含有腐蝕性或易燃氣、液體之環境中。
- 避免儲存於超出規格規定振動量之場所。

安裝環境條件

操作溫度： $0^{\circ}\text{C} \sim 55^{\circ}\text{C}$ ($32^{\circ}\text{F} \sim 131^{\circ}\text{F}$)

長時間的運轉的環境溫度建議保持在 45°C 以下，以確保產品的可靠性能；若環境溫度超過 45°C 以上時，請設置於通風條件符合且無過熱危險的配電箱內。並注意機器的振動是否會影響配電箱的電子裝置。

為了使 NC 系列控制器能夠符合本公司保固範圍以及日後的維護，安裝時務必注意下列事項：

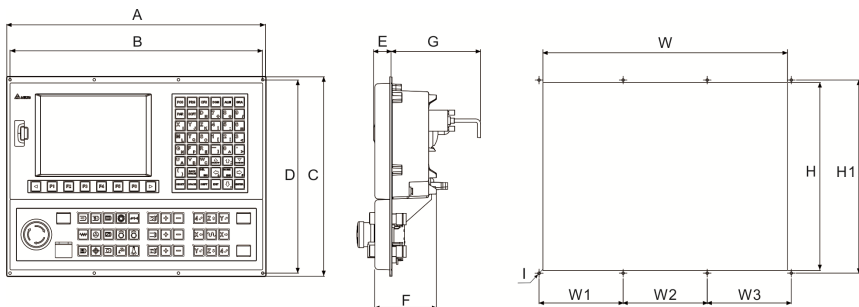
- 產品適合的安裝環境必須為：無發高熱裝置、無水滴、蒸氣、灰塵及油性灰塵之場所；無腐蝕、易燃性之氣、液體之場所；無漂浮性的塵埃及金屬微粒之場所；堅固無振動、無電磁雜訊干擾之場所。
- 安裝地點之溫度與濕度請勿超過規格所規定之範圍。

安裝方式及空間

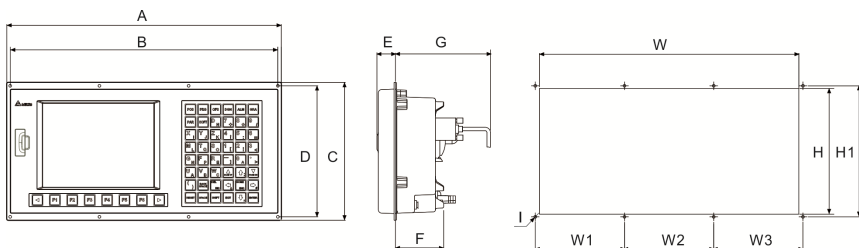
NC 系列控制器必須垂直安裝於乾燥且堅固、符合 NEMA 標準的平台。為了使通風及散熱循環效果良好，與其上下左右及相鄰的物品和擋板(牆)必須保持足夠空間 (建議值為 50mm 或 2 英吋)，並且不可封住控制器的吸排氣孔，請注意過熱會造成控制器故障。

產品尺寸

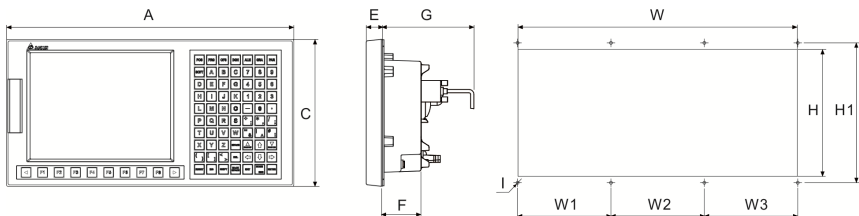
NC300A-MI-A_ / NC200A-MI-A_ 開孔/外觀尺寸標記



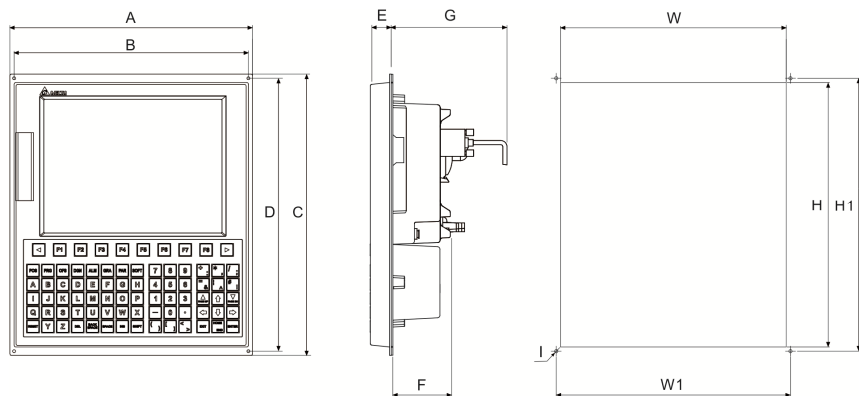
NC300A-MS-A_ 開孔/外觀尺寸標記



NC310A-MS-A_ 開孔/外觀尺寸標記



NC311A-MS-A_ 開孔/外觀尺寸標記



外觀尺寸

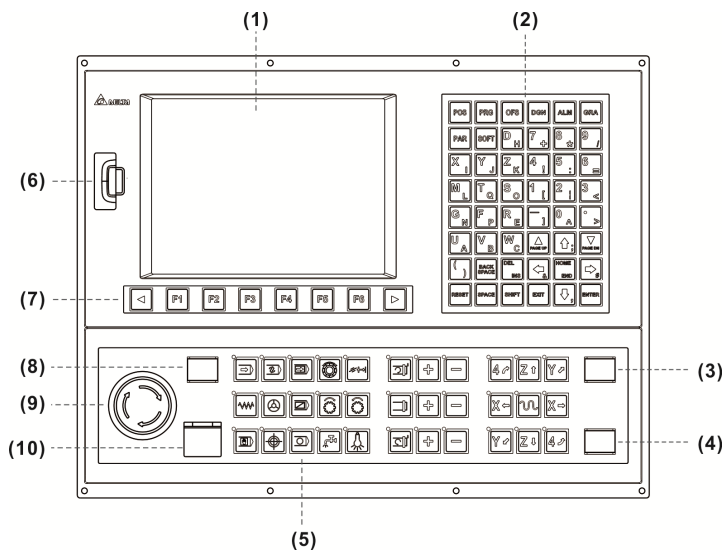
| 機型 / 尺寸 | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------|-------------------------------|--------------|--------------|--------------|
| A | 400 mm | 400 mm | 290 mm | 435 mm |
| B | 390 mm | 390 mm | 280 mm | — |
| C | 309 mm | 200 mm | 335.5 mm | 221 mm |
| D | 299 mm | 190 mm | 325.5 mm | — |
| E | 25 mm | 25 mm | 23 mm | 23 mm |
| F | 70 mm | 70 mm | 70 mm | 70 mm |
| G | 130 mm (min) | 130 mm (min) | 130 mm (min) | 130 mm (min) |

開孔尺寸

| 機型 / 尺寸 | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------|-------------------------------|--------------|--------------|--------------|
| H | 291±0.3 mm | 182.5±0.3 mm | 315.5±0.3 mm | 191±0.3 mm |
| H1 | 299 mm | 190 mm | 325.5 mm | 210.4 mm |
| W | 378±0.3 mm | 378±0.3 mm | 270±0.3 mm | 423±0.3 mm |
| W1 | 130 mm | 130 mm | 280 mm | 141.47 mm |
| W2 | 130 mm | 130 mm | — | 141.47 mm |
| W3 | 130 mm | 130 mm | — | 141.47 mm |
| I | Φ 4 mm | Φ 4 mm | Φ 4 mm | Φ 4.5 mm |

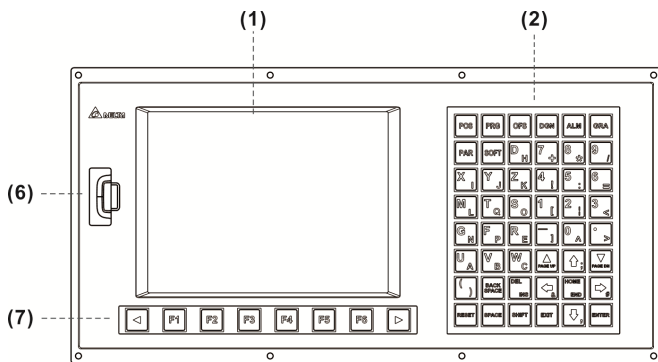
各部說明

NC300A-MI-A_ (正面)

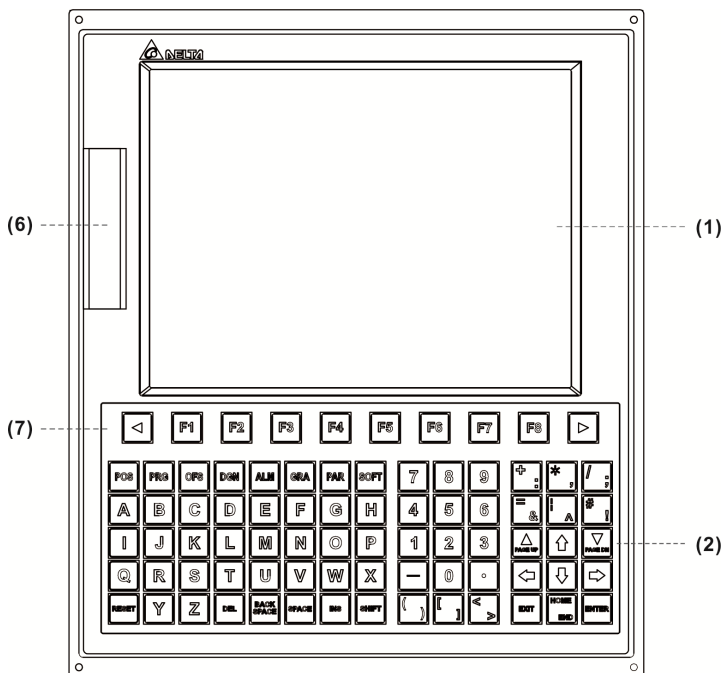


| 編號 | 項目 |
|------|--------|
| (1) | 螢幕 |
| (2) | 第一操作面板 |
| (3) | 程式啟動 |
| (4) | 程式停止 |
| (5) | 第二操作面板 |
| (6) | USB 插槽 |
| (7) | 功能鍵 |
| (8) | 開電 |
| (9) | 緊急停止 |
| (10) | 關電 |

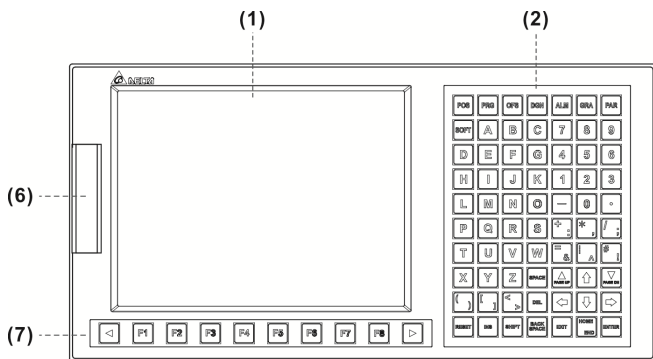
NC300A-MS-A_ (正面)



NC311A-MS-A_ (正面)

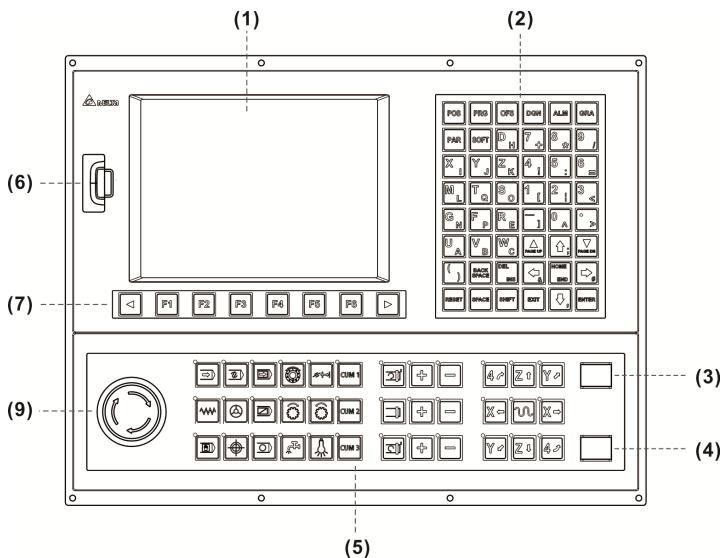


NC310A-MS-A_ (正面)



| 編號 | 項目 |
|-----|--------|
| (1) | 螢幕 |
| (2) | 第一操作面板 |
| (6) | USB 插槽 |
| (7) | 功能鍵 |

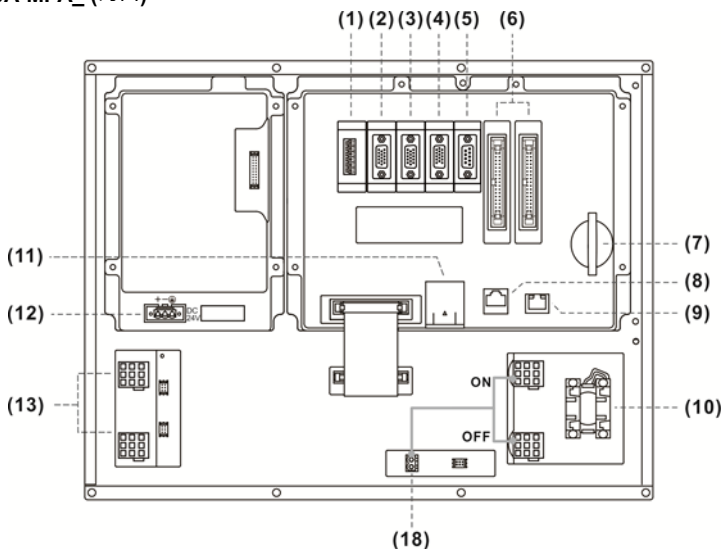
NC200A-MI-A_ (正面)



| 編號 | 項目 |
|-----|--------|
| (1) | 螢幕 |
| (2) | 第一操作面板 |
| (3) | 程式啟動 |
| (4) | 程式停止 |
| (5) | 第二操作面板 |
| (6) | USB 插槽 |
| (7) | 功能鍵 |
| (9) | 緊急停止 |

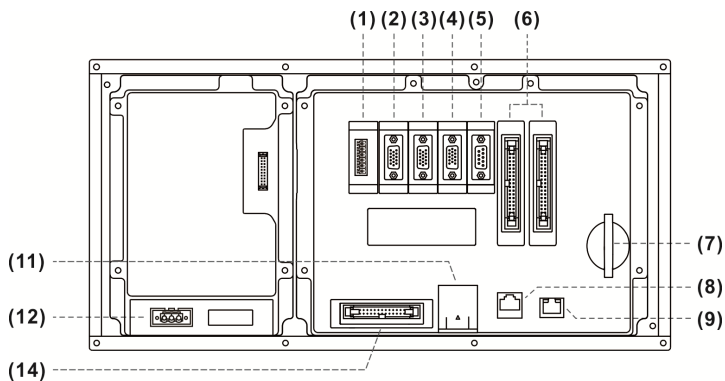
通訊介面說明

NC300A-MI-A_ (背面)



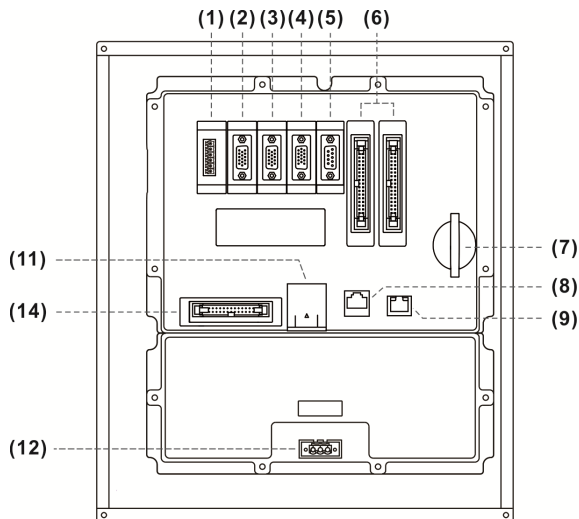
| 編號 | 項目 |
|------|------------------------------|
| (1) | 高速串列 I/O 端子 |
| (2) | 手輪端子 |
| (3) | 主軸端子 |
| (4) | 四軸極限端子 |
| (5) | RS-485 端子 |
| (6) | 本機 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 乙太網路端子 |
| (10) | 緊急停止 |
| (11) | 電池座 |
| (12) | 供給控制器 24 V _{DC} 電源 |
| (13) | 程式啟動 / 程式停止 |
| (18) | 供給第二面板 24 V _{DC} 電源 |

NC300A-MS-A_ (背面)



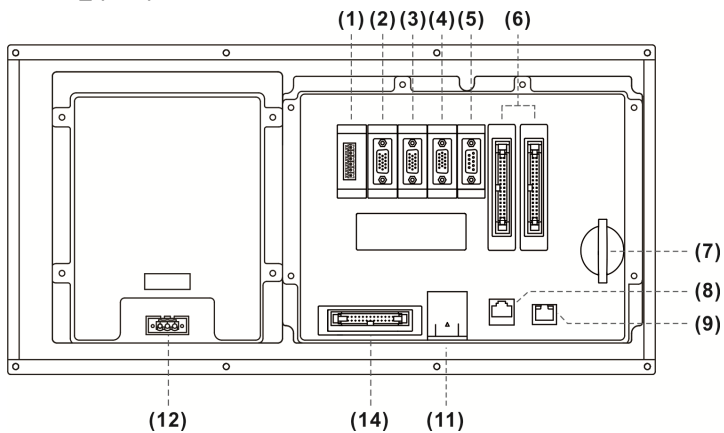
| 編號 | 項目 |
|------|-----------------------------|
| (1) | 高速串列 I/O 端子 |
| (2) | 手輪端子 |
| (3) | 主軸端子 |
| (4) | 四軸極限端子 |
| (5) | RS-485 端子 |
| (6) | 本機 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 乙太網路端子 |
| (11) | 電池座 |
| (12) | 供給控制器 24 V _{DC} 電源 |
| (14) | 第二面板排線插槽 |

NC311A-MS-A_ (背面)



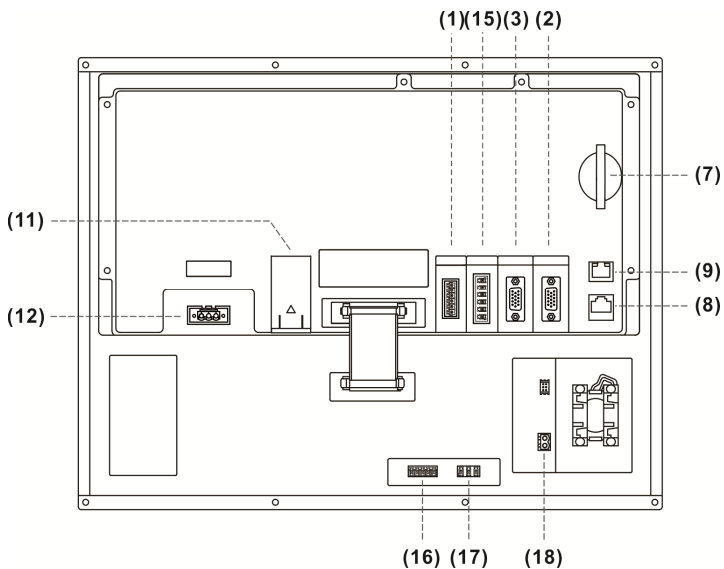
| 編號 | 項目 |
|------|-----------------------------|
| (1) | 高速串列 I/O 端子 |
| (2) | 手輪端子 |
| (3) | 主軸端子 |
| (4) | 四軸極限端子 |
| (5) | RS-485 端子 |
| (6) | 本機 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 乙太網路端子 |
| (11) | 電池座 |
| (12) | 供給控制器 24 V _{DC} 電源 |
| (14) | 第二面板排線插槽 |

NC310A-MS-A_ (背面)



| 編號 | 項目 |
|------|-----------------------------|
| (1) | 高速串列 I/O 端子 |
| (2) | 手輪端子 |
| (3) | 主軸端子 |
| (4) | 四軸極限端子 |
| (5) | RS-485 端子 |
| (6) | 本機 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 乙太網路端子 |
| (11) | 電池座 |
| (12) | 供給控制器 24 V _{DC} 電源 |
| (14) | 第二面板排線插槽 |

NC200A-MI-A_ (背面)



| 編號 | 項目 |
|------|------------------------------|
| (1) | 高速串列 I/O 端子 |
| (2) | 手輪端子 |
| (3) | 主軸端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 乙太網路端子 |
| (11) | 電池座 |
| (12) | 供給控制器 24 V _{DC} 電源 |
| (15) | 高速 G31 端子 |
| (16) | 本機 I/O 輸入端子 |
| (17) | 本機 I/O 輸出端子 |
| (18) | 供給第二面板 24 V _{DC} 電源 |

硬體規格

| 型號 | NC300A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ | NC200A-MI-A_ |
|-------------------------|---|----------------|----------------|----------------|-----------------|
| 工作環境 | 10% ~ 95% RH [0 ~ +55°C] | | | | |
| 儲存環境 | 10% ~ 95% RH [-20~ +60°C] | | | | |
| 冷卻方式 | 自然冷卻 | | | | |
| 工作電壓 | +24 V _{DC} (-10% ~ +15%) (內建隔離電路) | | | | |
| 絕緣耐力 | 24 V _{DC} 端子與 FG 端子間：AC500V · 1 分鐘 | | | | |
| 消耗功率 | 24V 0.6A 15W | | | | |
| 記憶體 備份電池 | 3V 鋰電池 CR2032 × 1 | | | | |
| 備份電池壽命 | 依使用環境溫度及使用條件而不同 · 常溫 25°C 下壽命約三年以上 | | | | |
| 尺寸 (W)x(H)x(D) mm | 400 x 309 x 123 | 400 x 200 x 97 | 290 x 335 x 95 | 435 x 221 x 95 | 400 x 309 x 123 |
| 重量 (kg) | 4.1 | 3.1 | 3.8 | 3.8 | 3.8 |

感谢您购买本产品，在使用之前，请详读本手册以正确使用产品；请将本手册放置在明显的地点以便随时查阅。在您尚未读完本手册前，请务必遵守下列事项：

- 安装的环境必须没有水气、腐蚀性气体及可燃性气体。
- 接线时，请依 NC 系列操作维护手册中的端子定义图说明进行施工，并请确实实施接地工程。
- 通电时，请勿拆解控制器或更改配线，勿接触电源处，以免触电。

如果您在使用上仍有问题，请洽询经销商或者本公司客服中心。内容规格有所修正时，本公司将不另行通知，请洽询代理商或至台达网站 (<http://www.delta.com.tw/ia/>) 下载最新版本。

安全注意事项

安装注意



- 请依照手册指定的方式安装控制器，否则可能导致设备损坏。
- 禁止将本产品暴露在有水气、腐蚀性气体、可燃性气体等物质的场所中使用，否则可能会造成触电或火灾。

配线注意



- 请将接地端子连接到 class-3 (100 Ω以下) 接地，接地不良可能会造成通讯异常、触电或火灾。

设备运转前注意



- 请先使用 MLC 编辑软件正确地规划 I/O 动作，否则可能导致运转异常。
- 机械设备运转前须适当调整参数，否则将造成运转异常或故障。
- 请确认紧急停止开关动作是否正常，避免在无保护的状态下运转设备。

操作注意



- 禁止在开启电源时改变配线，否则可能造成人员触电受伤。
- 请勿以尖锐物品碰触面板，否则可能导致面板凹陷，而导致控制器无法正常运作。

保养及检查



- 电源启动时，请勿拆下控制器面板或接触控制器内部，否则会造成触电。
- 电源关闭 10 分钟内，不得接触接线端子，残余电压可能造成触电。
- 更换备用电池前应先行切断电源，并在更换后重新检查系统设定值。
- 操作控制器时不可封住排气孔，散热不良易导致控制器故障。

配线方法



- 电源：请正确供应控制器 24V 直流电源，并遵照线材规格配线，以免发生危险。
- 线材选用：所有讯号线请采用多股及多芯绞合线整体隔离。
- 配线长度：除了 REMOTE I/O 与 DMCNET 讯号线最长为 20 m，其余讯号线长度最长为 10 m。
- 本机 I/O 与远程 I/O 需要另外配接 24V 直流电源，才可正常输出输入讯号。

通讯电路的配线



- DMCNET 接线：请依标准规格采用通讯配线线材。
- 请确保控制器与驱动器的接线无松脱情形，否则将导致运转异常。

产品检查

为了防止本产品在购买与运送过程中的疏忽，请详细检查下表所列出的项目：

| 检查项目 | 内容 |
|----------|-----------------------|
| 是否为购买的产品 | 检查控制器铭板上的型号，请参阅产品型号说明 |
| 按键开关 | 用手按压各按键，按键触感应该平顺。 |
| 外观 | 目视检查外观损伤 |
| 连接器 | 是否有连接器松脱或未固定的状况 |

如果发生任何上述情形，请与代理商联络以获得妥善的解决。

NC 系列控制器可搭配伺服驱动器

搭配台达 ASDA-A2 与 ASDA-M 系列伺服驱动器，适用型号：ASD-A2-□□□□-N、ASD-A2-□□□□-NN 与 ASD-M-□□□□-F、ASD-A2-□□□□-F，详细规格请参阅 ASDA-A2 与 ASDA-M 系列使用手册。

产品型号说明

NC300A - MI - A
(1) (2)(3) (4)

(1) 名称

NC200 : 3 轴 8 寸控制器

NC300 : 3 轴 8 寸控制器

NC310 : 3 轴 10 寸横式控制器

NC311 : 3 轴 10 寸直式控制器

(2) 机种

M : 雕铣控制器

(3) 型式

I : 一体式(机身包含第一面板和第二操作面板)

S : 分离式(机身不含第二操作面板)

(4) 版本

A : 标准版

AE : 英文版

产品配件

| 产品配件 | NC300A-MI-A_ | NC300A-MS-A_ NC311A-MS-A_ NC310A-MS-A_ | NC200A-MI-A_ | 用途 |
|--------------------------|--------------|--|--------------|----------------------------------|
| 3-PIN 接头 1 个 | • | • | • | 电源 24 V _{DC} |
| 终端电阻 1 个 | • | • | • | DMCNET |
| M3 螺丝及螺帽 8 组 | • | • | • | 安装于机台使用 |
| 15-PIN 公接头 及其配件 2 组 | • | • | | 于 MPG 及 SPINDLE 使用 |
| 15-PIN 公、母接头 及其配件 2 组 | | | • | 于 MPG 及 SPINDLE 使用 |
| 15-PIN 母接头 及其配件 1 组 | • | • | | 于 AXIS 使用 |
| 5-PIN 接头 1 个 | | | • | 于第二面板 X 输出接点使用 |
| 3-PIN 接头 1 个 | | | • | 于第二面板 Y 输出接点使用 |
| 6-PIN 接头 2 个 | | | • | 于 HSI 及 REMOTE I/O 使用。*1 |
| 2-PIN 接头 1 个 | •*2 | | •*3 | 供给第二面板 24 V _{DC} 电源输入使用 |

注：

1. HSI：高速 G31 与外部紧急停止输入接口；REMOTE I/O：高速串行 I/O。
2. 供给第二面板的程序启动、程序停止按钮使用。
3. 供给第二面板上的 I/O 使用。

储存环境条件

本产品在安装之前必须置于其包装箱内。若暂时不使用，为了使该产品能够符合本公司的保固范围及日后的维护，储存时务必注意下列事项：

- 储存必须置于无尘垢、干燥之位置，最好适当包装存放在架子或台面。
- 储存的环境温度必须在 $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 140^{\circ}\text{F}$) 范围内。
- 储存位置与工作环境的相对湿度必须在 10%到 95%范围内，且无结露。
- 避免储存于含有腐蚀性或易燃气、液体之环境中。
- 避免储存于超出规格规定振动量之场所。

安装环境条件

操作温度： $0^{\circ}\text{C} \sim 55^{\circ}\text{C}$ ($32^{\circ}\text{F} \sim 131^{\circ}\text{F}$)

长时间的运转的环境温度建议保持在 45°C 以下，以确保产品的可靠性能；若环境温度超过 45°C 以上时，请设置于通风条件符合且无过热危险的配电箱内。并注意机器的振动是否会影响配电箱的电子装置。

为了使 NC 系列控制器能够符合本公司保固范围以及日后的维护，安装时务必注意下列事项：

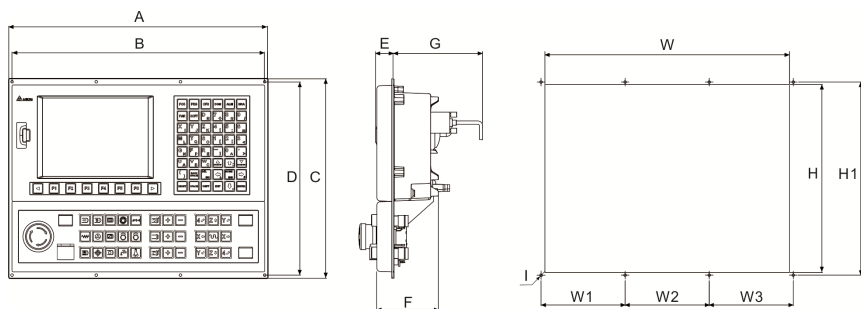
- 产品适合的安装环境必须为：无发高热装置、无水滴、蒸气、灰尘及油性灰尘之场所；无腐蚀、易燃性之气、液体之场所；无漂浮性的尘埃及金属微粒之场所；坚固无振动、无电磁噪声干扰之场所。
- 安装地点之温度与湿度请勿超过规格所规定之范围。

安装方式及空间

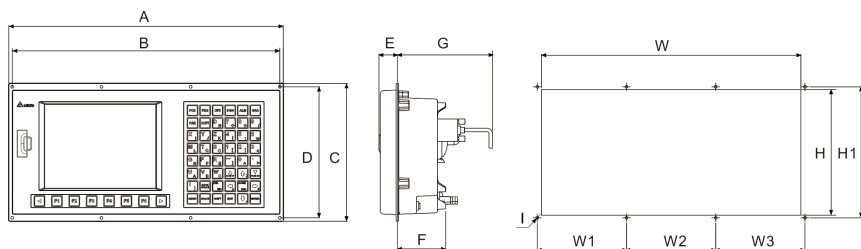
NC 系列控制器必须垂直安装于干燥且坚固、符合 NEMA 标准的平台。为了使通风及散热循环效果良好，与其上下左右及相邻的物品和挡板(墙)必须保持足够空间 (建议值为 50mm 或 2 英寸)，并且不可封住控制器的吸排气孔，请注意过热会造成控制器故障。

产品尺寸

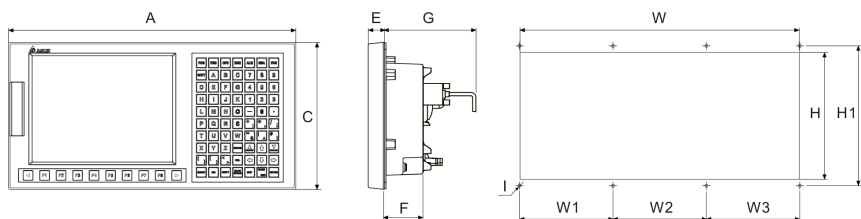
NC300A-MI-A_ / NC200A-MI-A_ 开孔/外观尺寸标记



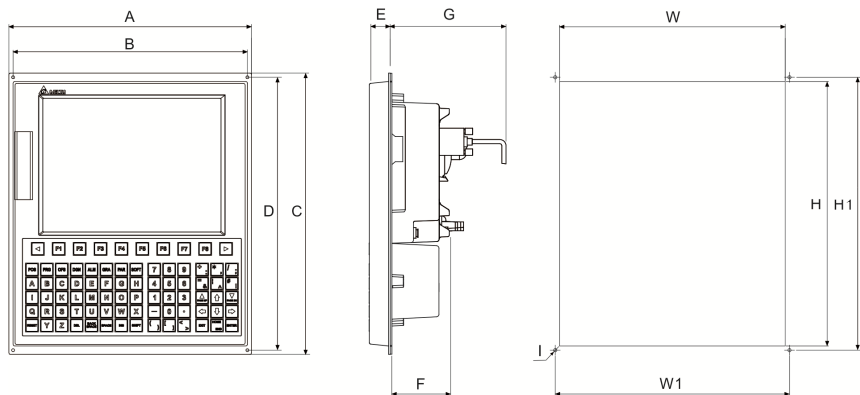
NC300A-MS-A_ 开孔/外观尺寸标记



NC310A-MS-A_ 开孔/外观尺寸标记



NC311A-MS-A_ 开孔/外观尺寸标记



外观尺寸

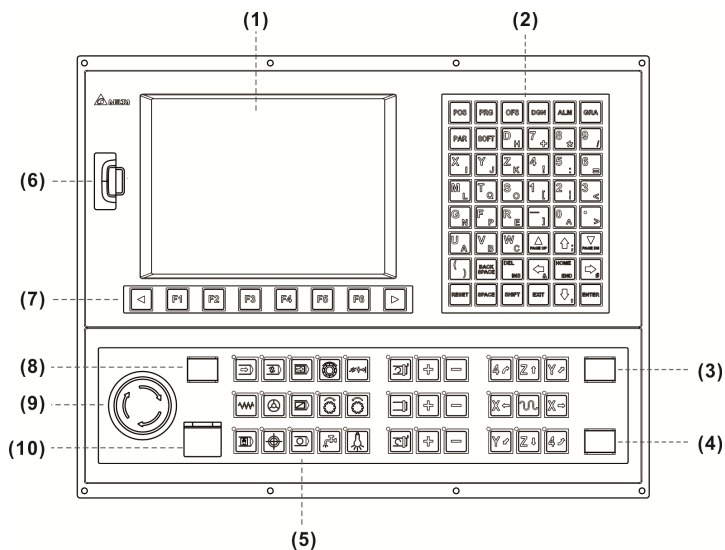
| 机型 / 尺寸 | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------|-------------------------------|--------------|--------------|--------------|
| A | 400 mm | 400 mm | 290 mm | 435 mm |
| B | 390 mm | 390 mm | 280 mm | - |
| C | 309 mm | 200 mm | 335.5 mm | 221 mm |
| D | 299 mm | 190 mm | 325.5 mm | - |
| E | 25 mm | 25 mm | 23 mm | 23 mm |
| F | 70 mm | 70 mm | 70 mm | 70 mm |
| G | 130 mm (min) | 130 mm (min) | 130 mm (min) | 130 mm (min) |

开孔尺寸

| 机型 / 尺寸 | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------|-------------------------------|--------------|--------------|--------------|
| H | 291±0.3 mm | 182.5±0.3 mm | 315.5±0.3 mm | 191±0.3 mm |
| H1 | 299 mm | 190 mm | 325.5 mm | 210.4 mm |
| W | 378±0.3 mm | 378±0.3 mm | 270±0.3 mm | 423±0.3 mm |
| W1 | 130 mm | 130 mm | 280 mm | 141.47 mm |
| W2 | 130 mm | 130 mm | - | 141.47 mm |
| W3 | 130 mm | 130 mm | - | 141.47 mm |
| I | Φ4 mm | Φ4 mm | Φ4 mm | Φ4.5 mm |

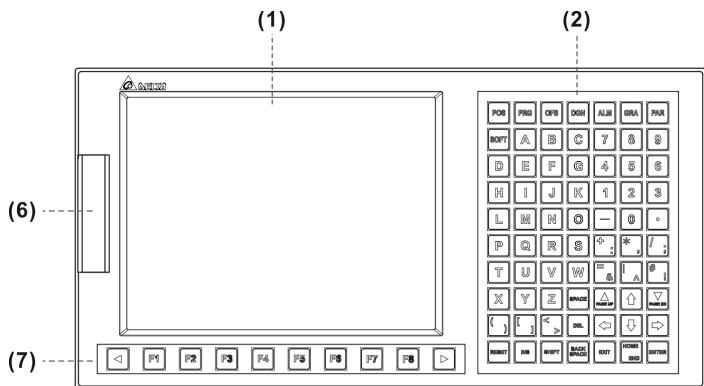
各部说明

NC300A-MI-A_ (正面)



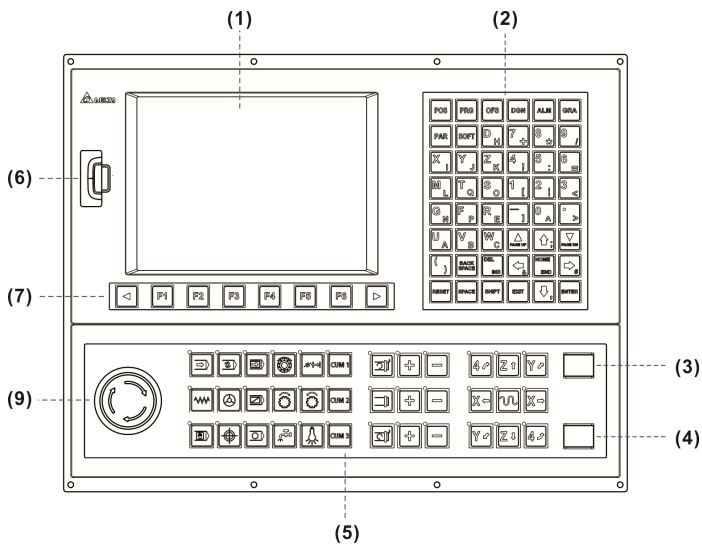
| 编号 | 项目 |
|------|--------|
| (1) | 屏幕 |
| (2) | 第一操作面板 |
| (3) | 程序启动 |
| (4) | 程序停止 |
| (5) | 第二操作面板 |
| (6) | USB 插槽 |
| (7) | 功能键 |
| (8) | 开电 |
| (9) | 紧急停止 |
| (10) | 关电 |

NC310A-MS-A_ (正面)



| 编号 | 项目 |
|-----|--------|
| (1) | 屏幕 |
| (2) | 第一操作面板 |
| (6) | USB 插槽 |
| (7) | 功能键 |

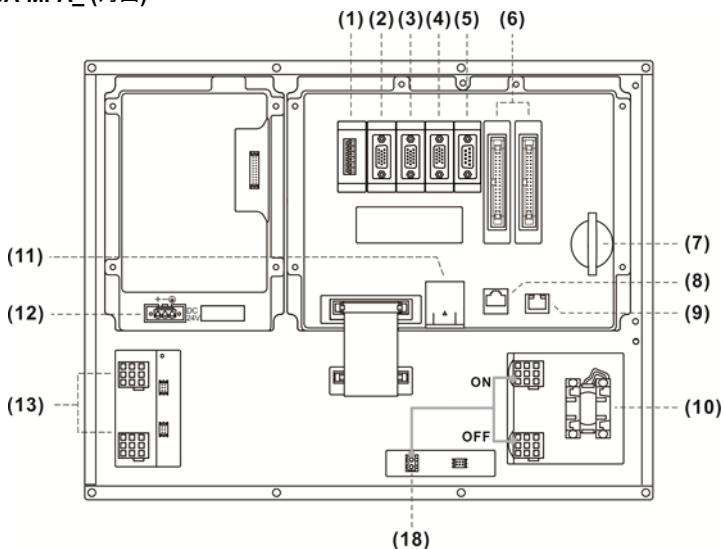
NC200A-MI-A_ (正面)



| 编号 | 项目 |
|-----|--------|
| (1) | 屏幕 |
| (2) | 第一操作面板 |
| (3) | 程序启动 |
| (4) | 程序停止 |
| (5) | 第二操作面板 |
| (6) | USB 插槽 |
| (7) | 功能键 |
| (9) | 紧急停止 |

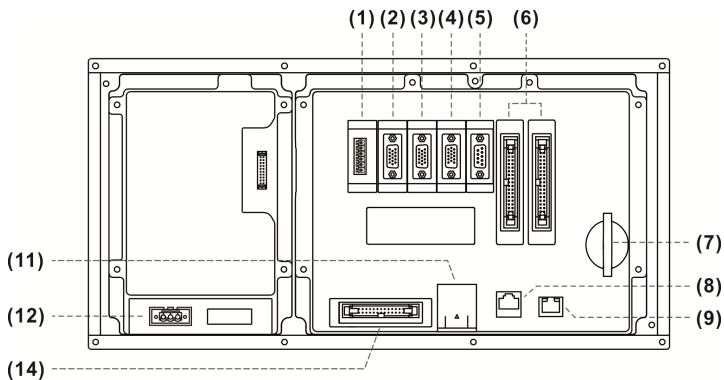
通讯接口说明

NC300A-MI-A_ (背面)



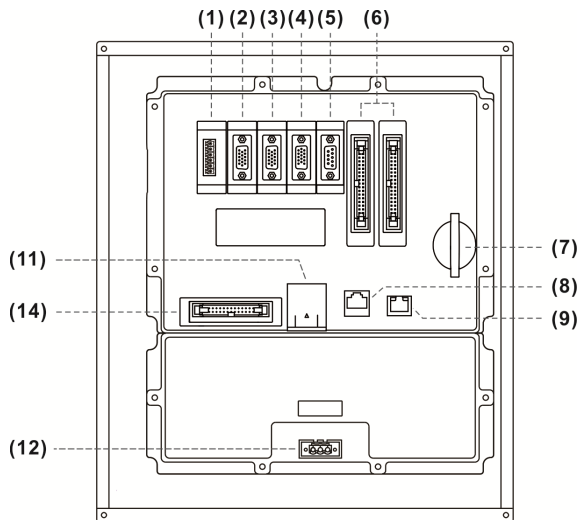
| 编号 | 项目 |
|------|------------------------------|
| (1) | 高速串行 I/O 端子 |
| (2) | 手轮端子 |
| (3) | 主轴端子 |
| (4) | 四轴极限端子 |
| (5) | RS-485 端子 |
| (6) | 本机 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 以太网端子 |
| (10) | 紧急停止 |
| (11) | 电池座 |
| (12) | 供给控制器 24 V _{DC} 电源 |
| (13) | 程序启动 / 程序停止 |
| (18) | 供给第二面板 24 V _{DC} 电源 |

NC300A-MS-A_ (背面)



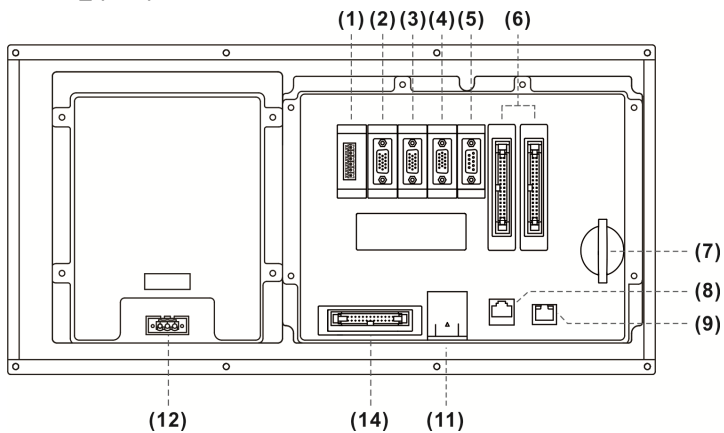
| 编号 | 项目 |
|------|-----------------------------|
| (1) | 高速串行 I/O 端子 |
| (2) | 手轮端子 |
| (3) | 主轴端子 |
| (4) | 四轴极限端子 |
| (5) | RS-485 端子 |
| (6) | 本机 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 以太网网络端子 |
| (11) | 电池座 |
| (12) | 供给控制器 24 V _{DC} 电源 |
| (14) | 第二面板扁平电缆插槽 |

NC311A-MS-A_ (背面)



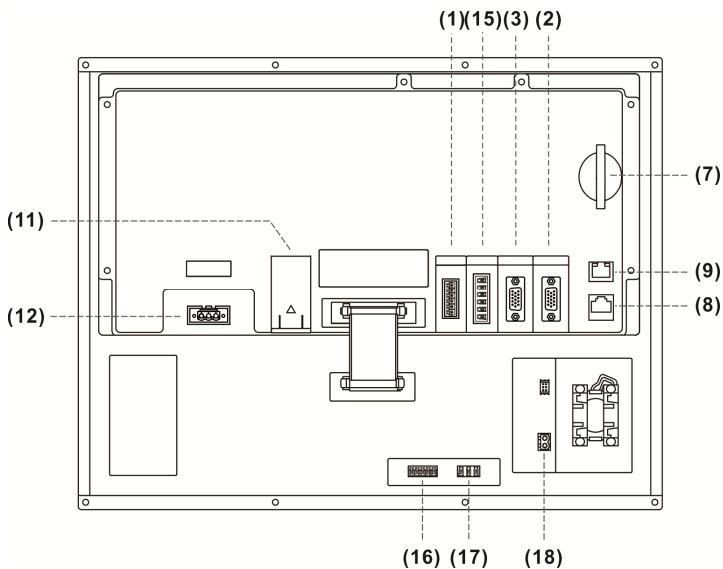
| 编号 | 项目 |
|------|-----------------------------|
| (1) | 高速串行 I/O 端子 |
| (2) | 手轮端子 |
| (3) | 主轴端子 |
| (4) | 四轴极限端子 |
| (5) | RS-485 端子 |
| (6) | 本机 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 以太网网络端子 |
| (11) | 电池座 |
| (12) | 供给控制器 24 V _{DC} 电源 |
| (14) | 第二面板扁平电缆插槽 |

NC310A-MS-A_ (背面)



| 编号 | 项目 |
|------|-----------------------------|
| (1) | 高速串行 I/O 端子 |
| (2) | 手轮端子 |
| (3) | 主轴端子 |
| (4) | 四轴极限端子 |
| (5) | RS-485 端子 |
| (6) | 本机 I/O 端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 以太网端子 |
| (11) | 电池座 |
| (12) | 供给控制器 24 V _{DC} 电源 |
| (14) | 第二面板扁平电缆插槽 |

NC200A-MI-A_(背面)



| 编号 | 项目 |
|------|------------------------------|
| (1) | 高速串行 I/O 端子 |
| (2) | 手轮端子 |
| (3) | 主轴端子 |
| (7) | CF 卡插槽 |
| (8) | DMCNET 端子 |
| (9) | 以太网网络端子 |
| (11) | 电池座 |
| (12) | 供给控制器 24 V _{DC} 电源 |
| (15) | 高速 G31 端子 |
| (16) | 本机 I/O 输入端子 |
| (17) | 本机 I/O 输出端子 |
| (18) | 供给第二面板 24 V _{DC} 电源 |

硬件规格

| 型号 | NC300A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ | NC200A-MI-A_ |
|-------------------------|---|----------------|----------------|----------------|-----------------|
| 工作环境 | 10% ~ 95% RH [0 ~ +55°C] | | | | |
| 储存环境 | 10% ~ 95% RH [-20~ +60°C] | | | | |
| 冷却方式 | 自然冷却 | | | | |
| 工作电压 | +24 V _{DC} (-10% ~ +15%) (内建隔离电路) | | | | |
| 绝缘耐力 | 24 V _{DC} 端子与 FG 端子间：AC500V · 1 分钟 | | | | |
| 消耗功率 | 15 W (24 V ; 0.6 A) | | | | |
| 内置电池 | 3V 锂电池 CR2032 × 1 | | | | |
| 内置电池寿命 | 依使用环境温度及使用条件而不同 · 常温 25°C 下寿命约三年以上 | | | | |
| 尺寸 (W)×(H)×(D) mm | 400 x 309 x 123 | 400 x 200 x 97 | 290 x 335 x 95 | 435 x 221 x 95 | 400 x 309 x 123 |
| 重量 (kg) | 4.1 | 3.1 | 3.8 | 3.8 | 3.8 |

有毒物质说明

| 部件名称 Part Name | 有毒物质-Hazardous Substances | | | | | |
|---|---------------------------|--------|--------|----------------|---------------|-----------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr VI) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 金属部件 Metal Part | X | O | O | O | O | O |
| 塑料部件 Plastic Part | O | O | O | O | O | O |
| 电子件 Electronic | X | O | O | O | O | O |
| 触点 Contacts | O | O | X | O | O | O |
| 线缆和线缆 附件 Cable & Cabling accessories | X | O | O | O | O | O |

| 部件名称 Part Name | 有毒物质-Hazardous Substances | | | | | |
|-------------------|---------------------------|--------|--------|----------------|---------------|-----------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr VI) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 电池 Battery | O | O | O | O | O | O |

本表格依据SJ/T11364的规定编制。

O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

This table is made according to SJ/T 11364.

O: indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.

X: indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572

Thank you for choosing this product. Before using the product, please read through this quick start carefully in order to ensure the correct use of the product. In addition, please place this quick start safely for reference whenever is needed. Before finishing reading this manual, please follow the rules below:

- No water, corrosive gas and inflammable gas are allowed in the installation environment.
- Please follow the instruction of pin definition as described in NC Series User Manual for Operation and Maintenance when wiring. Ground is a must.
- To prevent electric shock, please do not disconnect the controller, change the wiring, or touch the power source while power is being supplied.

Please consult the distributors or DELTA customer service center if any problem occurs. The content of this quick start may be revised without prior notice, please contact with distributors or download the latest version at <http://www.delta.com.tw/ia/>.

Safety Precautions

Installation



- Please follow the installation instructions in this manual; otherwise it may cause damage to the equipment.
- It is prohibited to expose the product to the environment containing water, corrosive gas, and inflammable gas. Otherwise, electric shock or fire may occur.

Wiring



- Please connect the ground terminal to class-3 ground system (under 100 Ω). Poor grounding may result in communication failure, electric shock or fire.

Before Operation



- Correctly plan for I/O actions with MLC Editor Software, or abnormal results may occur.
- Before operation, please properly adjust the parameter settings of the machine, otherwise it may cause abnormal operation.
- Please ensure the emergency stop can be activated at any time, and avoid operating the machine in unprotected condition.

Operation



- Do not modify wiring while power is being supplied. Otherwise, it may cause personal injury due to electric shock.
- Never use a sharp-pointed object to touch the panel, as doing this might dent the screen and lead to malfunction of the controller.

Maintenance and Inspection



- While power is being supplied, do not disassemble the controller panel or touch the internal parts; otherwise, electric shock may occur.
- Do not touch the ground terminal within 10 minutes after turning off the power, as the residual voltage may cause electric shock.
- Turn OFF the power first before replacing backup battery and recheck the system settings afterwards.
- Do not block the vent holes during operation, as malfunction may easily occur due to poor ventilation.

Wiring



- Power supply: In order to avoid danger, use a 24 V_{DC} power supply for the controller and comply with the wire specification when wiring.
- Wiring materials: Use multi-stranded twisted-pair wires or multi-core shielded-pair wires to isolate all cables.
- Wiring length: The maximum cable length for remote I/O signals and DMCNET communication is 20 m, and the maximum cable length for other signal cables is 10 m.
- To input and output signals, a 24 V_{DC} power is required for the controller I/O and remote I/O.

Wiring of Communication Circuit



- DMCNET wiring: The wiring materials should be in compliance with the standard specification.
- Please make sure the wiring between the controller and servo drive is tight and secure, as loose cables may cause abnormal operation.

Inspection

In order to prevent the negligence during purchasing and delivery, please carefully inspect the items listed below:

| Check Item | Content |
|--|---|
| Check if the product is what you have purchased. | Check the model specified on the controller's name plate, referring to Model explanation. |
| Keys and buttons | Press each key and button, which should feel smooth to touch. |
| Appearance | Visually check if there is any damage or scrape in the product's appearance. |
| Connectors | Check if there is any loose or un-tightened connector. |

If any of the above situations happens, please contact the distributors to solve the problems.

Servo Drive with NC300 Series Controller

The applicable model of ASDA-A2 and ASDA-M series servo drive is ASD-A2-□□□□-N, ASD-A2-□□□□-NN, ASD-M-□□□□-F and ASD-A2-□□□□-F. Please refer to ASDA-A2 and ASDA-M series user manual for further information.

Model Explanation

NC300A - MI - A
(1) (2)(3) (4)

- (1) Product Name
NC200: 3-Axis 8-inch CNC controller
NC300: 3-Axis 8-inch CNC controller
NC310: 3-Axis 10-inch Horizontal CNC controller
NC311: 3-Axis 10-inch Vertical CNC controller
- (2) Application
M: For milling applications
- (3) Type
I: All-in-one type (integrated with both primary and secondary panels)
S: Separated type (secondary panel not integrated)
- (4) Version
A: Standard version
AE: English version

Accessories

| Fittings | NC300A-MI-A_ | NC300A-MS-A_ NC311A-MS-A_ NC310A-MS-A_ | NC200A-MI-A_ | Purpose |
|---|--------------|--|--------------|---|
| One 3-pin connector | • | • | • | 24 V _{DC} power supply |
| One terminal resistor | • | • | • | DMCNET |
| Eight sets of M3 screws and nuts | • | • | • | Securing to the machine |
| Two sets of 15-pin male connectors with fittings | • | • | | MPG and SPINDLE |
| One male and one female 15-pin connectors with two sets of fittings | | | • | MPG and SPINDLE |
| One female 15-pin connector with fittings | • | • | | AXIS |
| One 5-pin connector | | | • | The X output contact of the secondary panel |
| One 3-pin connector | | | • | The Y output contact of the secondary panel |
| Two 6-pin connectors | | | • | HSI and REMOTE I/O *1 |
| One 2-pin connector | •*2 | | •*3 | The 24 V _{DC} power to the secondary panel |

Note:

1. HSI: The connectors of G31 high speed and external emergency stop; REMOTE I/O: High-speed Serial I/O.
2. For Cycle Start and Feed Hold keys on the secondary panel.
3. For I/O on the secondary panel.

Ambient Conditions of Storage

Before installation, this product has to be kept in the shipping carton. If the product is temporarily not in use, please comply with the following instructions in order to retain the warranty coverage as well as for future maintenance:

- The product should be stored in a dry and dust-free place. It is preferable to pack the product properly and store it on shelf or table.
- Store the product within an ambient temperature range of -20°C to 60°C (-4°F to 140°F).
- Store the product within a relative humidity range of 10% to 95%, non-condensing.
- Avoid storing the product in the environment containing corrosive gas and liquid.
- Avoid storing the product in the environment with vibration that is out of the range stipulated in the specification.

Ambient Conditions of Installation

Operation temperature: 0°C ~ 55°C (32°F ~ 131°F)

To ensure the product's reliability performance, it is suggested to keep the ambient temperature below 45°C during long-time operation. When the temperature is over 45°C, please place the product in a well-ventilated electric box without overheating problem. In addition, pay attention to the vibration of the machine, and check if it will influence the electronic devices of the electric box.

Please pay attention to the matters below in order to retain the warranty coverage and for future maintenance:

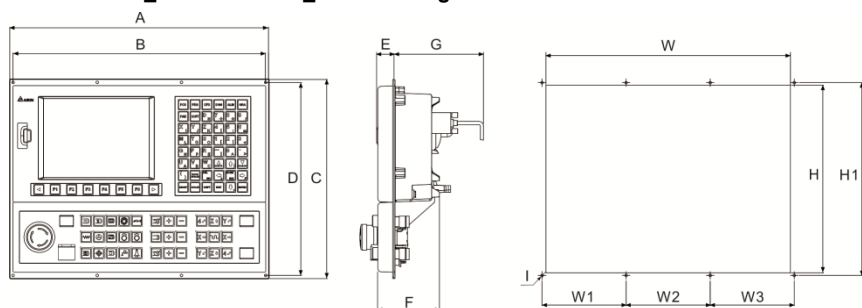
- The product should be installed in the environment without over-heat device, water drop, vapor, dust, oily dust, corrosive and inflammable gas, liquid, airborne dust, metal particles; and the environment should be solid without vibration or interference of electromagnetic noise.
- Make sure the temperature and humidity of the installation site is within the range stipulated in the product specification.

Installation Method and Space

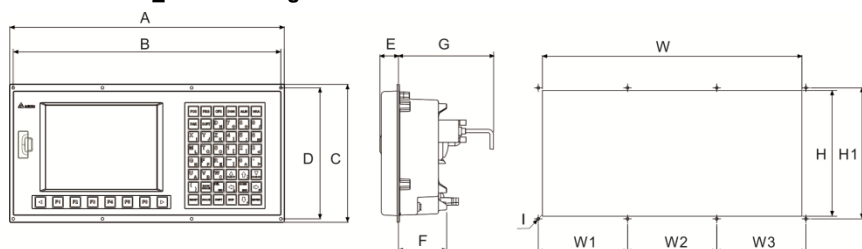
NC300 series controller must be installed vertically on a dry and robust platform that is also NEMA standards-compliant. For good ventilation and cooling efficiency, sufficient clearance (50 mm or 2 inches) must be maintained between servo drive(s) and adjacent objects/partitions (walls). In addition, do not block the vent holes of the partitions (walls) as overheating will cause malfunction.

Dimensions

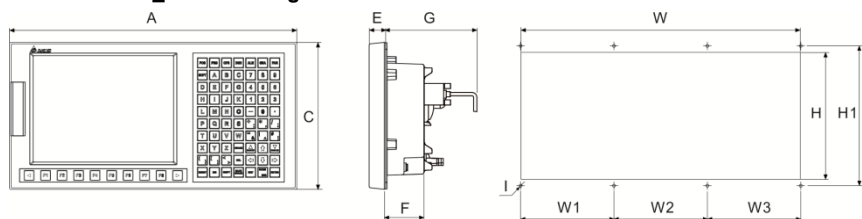
NC300A-MI-A_ / NC200A-MI-A_ size marking



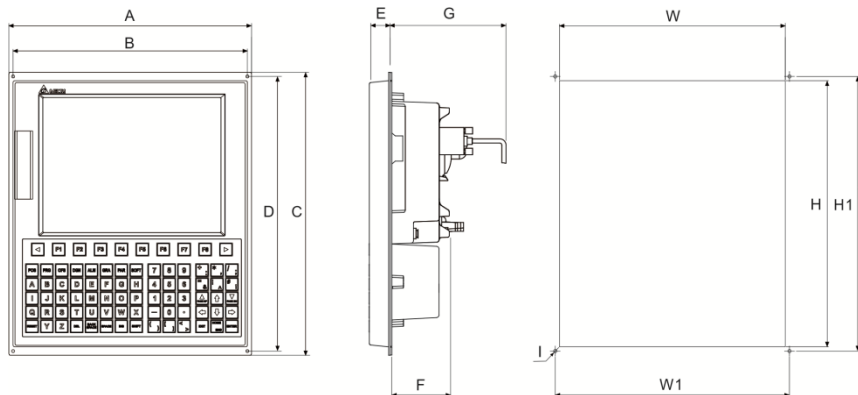
NC300A-MS-A_ size marking



NC310A-MS-A_ size marking



NC311A-MS-A_ size marking



Appearance Dimensions

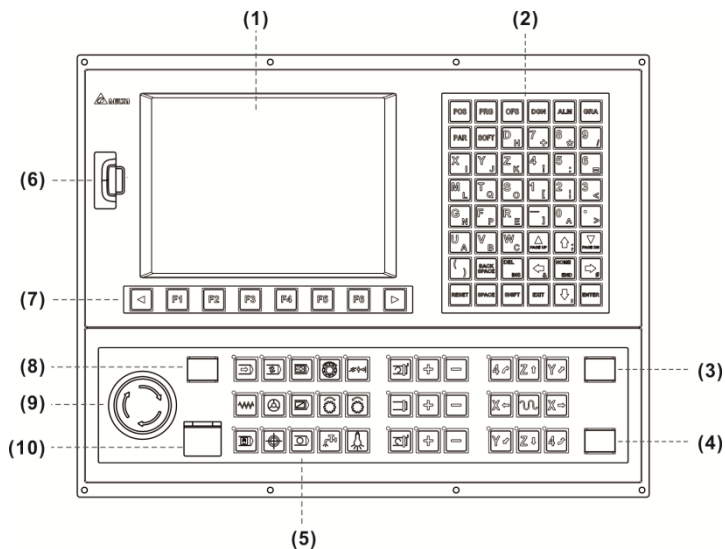
| Model / Size | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|--------------|-------------------------------|--------------|--------------|--------------|
| A | 400 mm | 400 mm | 290 mm | 435 mm |
| B | 390 mm | 390 mm | 280 mm | — |
| C | 309 mm | 200 mm | 335.5 mm | 221 mm |
| D | 299 mm | 190 mm | 325.5 mm | — |
| E | 25 mm | 25 mm | 23 mm | 23 mm |
| F | 70 mm | 70 mm | 70 mm | 70 mm |
| G | 130 mm (min) | 130 mm (min) | 130 mm (min) | 130 mm (min) |

Cut-out Dimensions

| Model / Size | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|--------------|-------------------------------|--------------|--------------|--------------|
| H | 291±0.3 mm | 182.5±0.3 mm | 315.5±0.3 mm | 191±0.3 mm |
| H1 | 299 mm | 190 mm | 325.5 mm | 210.4 mm |
| W | 378±0.3 mm | 378±0.3 mm | 270±0.3 mm | 423±0.3 mm |
| W1 | 130 mm | 130 mm | 280 mm | 141.47 mm |
| W2 | 130 mm | 130 mm | — | 141.47 mm |
| W3 | 130 mm | 130 mm | — | 141.47 mm |
| I | Φ4 mm | Φ4 mm | Φ4 mm | Φ4.5 mm |

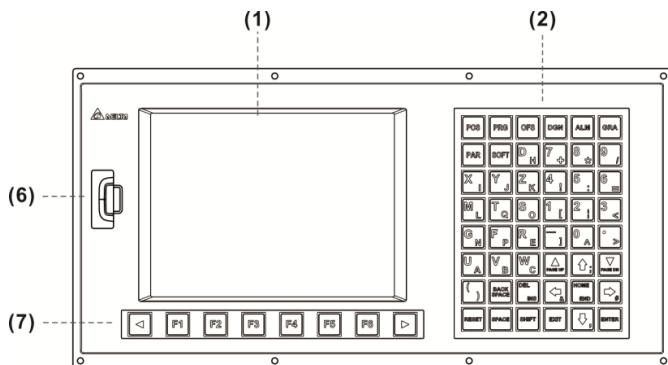
NC300 Series Controller Overview

NC300A-MI-A_ (front view)

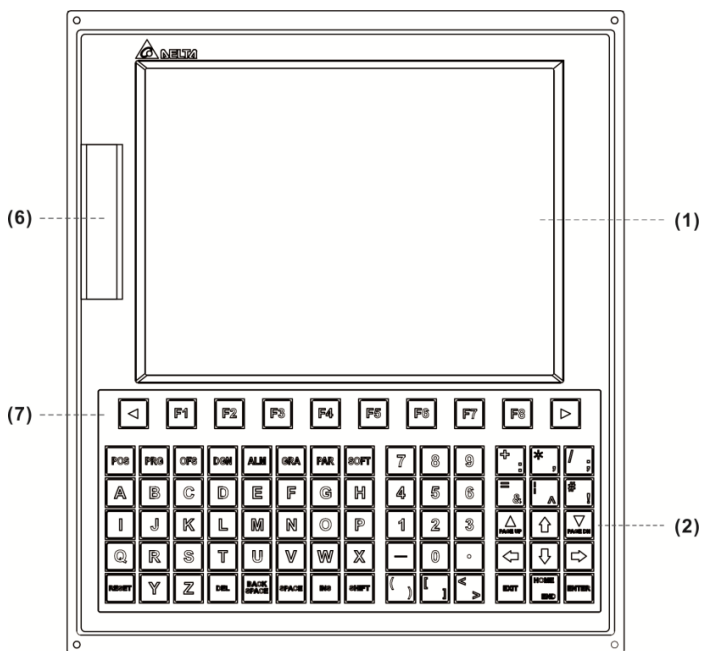


| No. | Item |
|------|---------------------|
| (1) | Screen |
| (2) | The Primary Panel |
| (3) | Cycle Start |
| (4) | Feed Hold |
| (5) | The Secondary Panel |
| (6) | USB |
| (7) | Function Keys |
| (8) | Power ON |
| (9) | Emergency Stop |
| (10) | Power OFF |

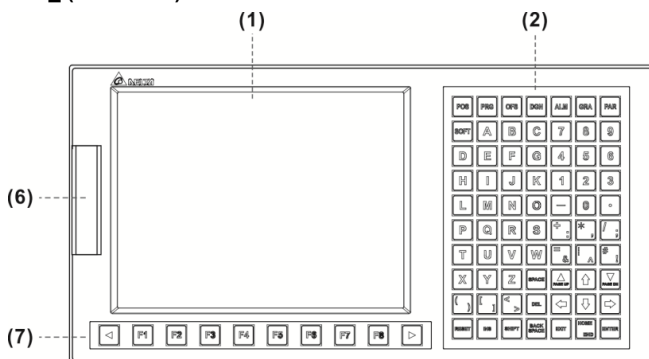
NC300A-MS-A_ (front view)



NC311A-MS-A_ (front view)

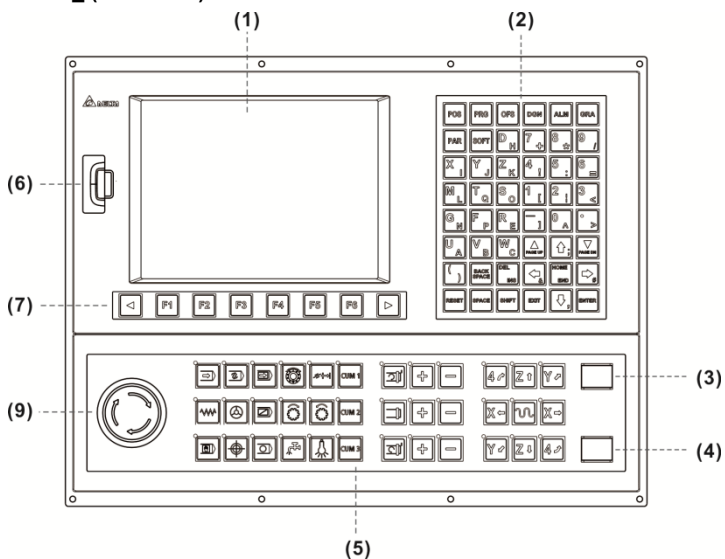


NC310A-MS-A_ (front view)



| No. | Item |
|-----|-------------------|
| (1) | Screen |
| (2) | The Primary Panel |
| (6) | USB |
| (7) | Function Keys |

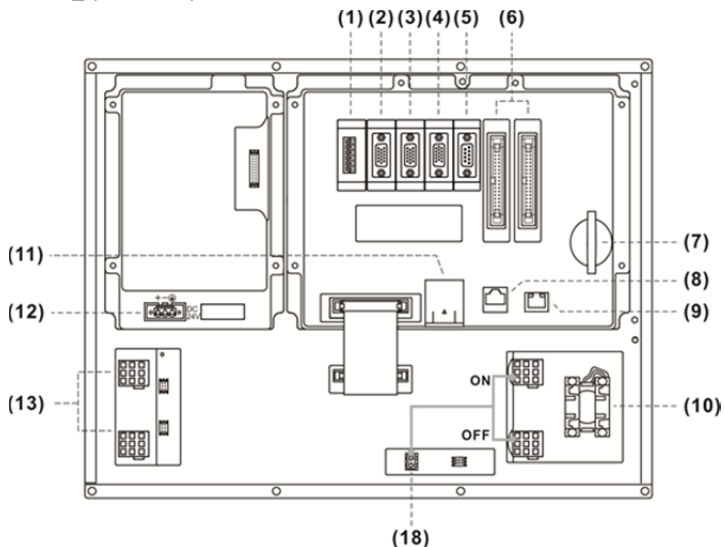
NC200A-MI-A_ (front view)



| No. | Item |
|-----|---------------------|
| (1) | Screen |
| (2) | The Primary Panel |
| (3) | Cycle Start |
| (4) | Feed Hold |
| (5) | The Secondary Panel |
| (6) | USB |
| (7) | Function Keys |
| (9) | Emergency Stop |

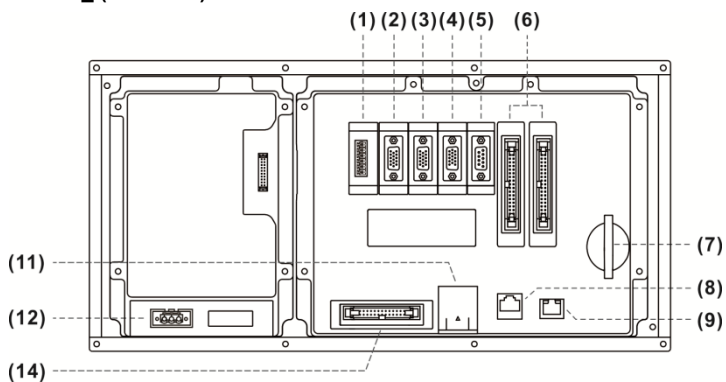
Communication Interface Overview

NC300A-MI-A_ (rear view)



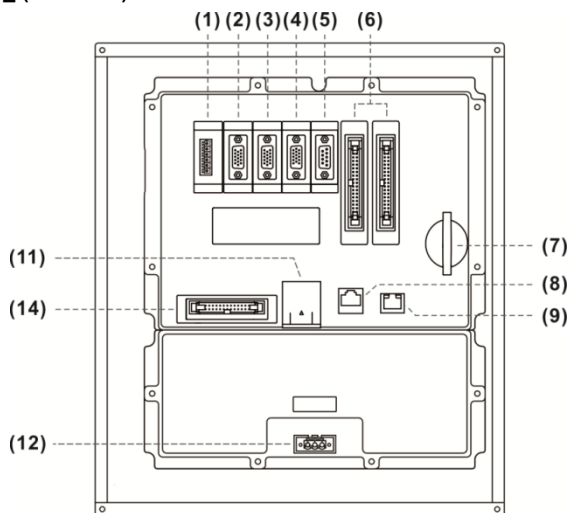
| No. | Item |
|------|--|
| (1) | Remote I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Local I/O |
| (7) | CF Card |
| (8) | DMCNET |
| (9) | ETHERNET |
| (10) | Emergency Stop |
| (11) | Battery Holder |
| (12) | 24 V _{DC} Power |
| (13) | Cycle Start / Feed Hold |
| (18) | 24 V _{DC} Power for the secondary panel |

NC300A-MS-A_ (rear view)



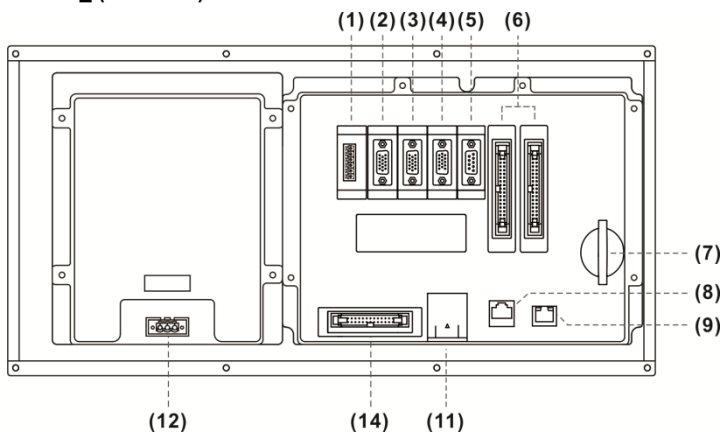
| No. | Item |
|------|--------------------------|
| (1) | Remote I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Local I/O |
| (7) | CF Card |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Battery Holder |
| (12) | 24 V _{DC} Power |
| (14) | Keypad I/O |

NC311A-MS-A_ (rear view)



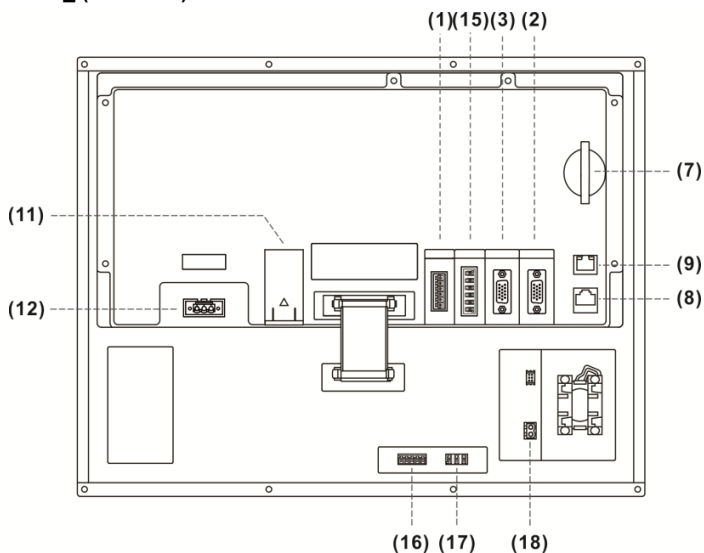
| No. | Item |
|------|--------------------------|
| (1) | Remote I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Local I/O |
| (7) | CF Card |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Battery Holder |
| (12) | 24 V _{DC} Power |
| (14) | Keypad I/O |

NC310A-MS-A_ (rear view)



| No. | Item |
|------|--------------------------|
| (1) | Remote I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Local I/O |
| (7) | CF Card |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Battery Holder |
| (12) | 24 V _{DC} Power |
| (14) | Keypad I/O |

NC200A-MI-A_ (rear view)



| No. | Item |
|------|--|
| (1) | Remote I/O |
| (2) | MPG Handwheel |
| (3) | Spindle |
| (7) | CF Card |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Battery Holder |
| (12) | 24 V _{DC} Power |
| (15) | HSI |
| (16) | Local I/O Input |
| (17) | Local I/O Output |
| (18) | 24 V _{DC} Power for the secondary panel |

Specifications

| Model | NC300A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ | NC200A-MI-A_ |
|-------------------------------|--|----------------|----------------|----------------|-----------------|
| Working Environment | 10% ~ 95% RH [0 ~ +55°C] | | | | |
| Storage Environment | 10% ~ 95% RH [-20 ~ +55°C] | | | | |
| Cooling Method | Natural cooling | | | | |
| Voltage | +24 V _{DC} (-10% ~ +15%) (built-in isolated circuit) | | | | |
| Insulation Endurance | Between 24 V _{DC} and FG terminals: 500 V _{AC} , 1 minute | | | | |
| Power Consumption | 15 W (24 V; 0.6 A) | | | | |
| Backup Battery for Memory | 3V lithium battery CR2032 × 1 | | | | |
| Backup Battery Life | Varies with ambient temperature and working conditions; about 3 years at 25°C room temperature | | | | |
| Dimensions (W) x (H) x (D) mm | 400 x 309 x 123 | 400 x 200 x 97 | 290 x 335 x 95 | 435 x 221 x 95 | 400 x 309 x 123 |
| Weight (kg) | 4.1 | 3.1 | 3.8 | 3.8 | 3.8 |

Ürünümüzü satın aldığınız için teşekkürler. Ürünü kullanmadan önce, doğru kullanım için bu dokümanı tamamen dikkatlice okuyunuz. Ayrıca bu dokümanı ihtiyaç duyduğunuzda kullanmak için referans olarak iyi muhafaza ediniz. Dokümanı okumayı tamamladıysanız aşağıda yazılı kurallara dikkat ediniz.

- Ürünün kurulumu su, aşındırıcı ve yanıcı gaz bulunmayan ortamlara yapılmalıdır.
- Kablolama yaparken çalışma ve bakım için NC Serisi Kullanım Kılavuzunda tanımlandığı gibi pin yerleşimi talimatlarına uyunuz. Topraklama bağlantısı mutlaka yapılmalıdır.
- Elektrik şokunu önlemek için cihaz enerjili iken kontrolörü sökmeyiniz, bağlantıları değiştirmeyiniz veya güç kaynağına dokunmayınız.

Ürünlerin kullanımı ile ilgili sorularınız için teknik servisimizle kontak kurabilirsiniz. Bu bilgi dokümanının içeriği hiçbir bildirim gerekliliği olmadan değiştirilebilir. Dokümanın son halini firmamızdan talep edebilir veya internetten indirebilirsiniz.

<http://www.delta.com.tw/industrialautomation/>

Güvenlik Uyarıları

Kurulum



- Kurulum için direktifleri izleyiniz. Aksi halde ürün zarar görebilir.
- Ürünü su, aşındırıcı gaz, yanıcı gaz olan veya olası elektrik şoku ve yangın bulunan ortamlara maruz bırakmayınız.

Bağlantı



- Lütfen toprak terminalini sınıf-3 toprak sistemine bağlayınız (100 Ω altı). Yanlış topraklama elektrik şoku ve yangına sebep olabilir.

Çalışma Öncesi



- I/O eylemlerini MLC software kullanarak doğru olarak planlayınız. Aksi halde çalışmada anormallik meydana gelebilir.
- Çalıştırmadan önce makinanın parametre ayarlarını düzgün olarak ayarlayınız. Aksi takdirde anormal çalışmasına sebep olabilir.
- Makinayı çalıştırmaya başlamadan önce, acil stop donanımının her an aktif kullanılabilecek şekilde aktif olduğuna emin olunuz.

Çalışma Esnasında



- Çalışma sırasında bağlantıyı değiştirmeyiniz. Aksi halde elektrik şoku veya kişisel zarar meydana gelebilir.
- Panele sivri uçlu nesnelere dokunarak müdahale etmeyiniz. Aksi halde ürün zarar görebilir veya çalışmasında problem olabilir.

Bakım ve Kontroller



- Üründe enerjisi varken kontrol ünitesini açmayınız ve iç komponentlerine dokunmayınız. Aksi halde elektrik şoku meydana gelebilir.
- Ürünün enerjisini kestikten sonra 10 dakika boyunca terminallerine dokunmayınız. Aksi halde elektrik şoku meydana gelebilir.
- Ürünün bataryasını değiştirirken lütfen önce enerjiyi kesiniz. Pili değiştirdikten sonra sistem ayarlarını tekrar kontrol ediniz.
- Çalışma sırasında havalandırma deliklerini tıkamayınız. Aksi halde kötü havalandırmadan dolayı ürün zarar görebilir.

Bağlantı



- Güç beslemesi: CNC kontrol ünitesini 24 V_{DC} ile beslemesini yapınız. Tehlikeyi önlemek için bağlantıyı direktiflerinde belirtildiği gibi yapınız.
- Kablolama malzemeleri: Bağlantı ve izolasyon için çok telli çift bükümlü kablo veya çok-çekirdekli ekranlı çift kablolar kullanınız.
- Kablo uzunluğu: Uzak I/O sinyalleri ve DMCNET haberleşme için maksimum kablo uzunluğu 20m ve diğer sinyal kabloları için maksimum kablo uzunluğu 10m olabilir.
- Kontrol ünitesi dijital girişler ve çıkışlar ve uzak I/O bağlantısı sinyallerini kontrol için 24 V_{DC} güç kaynağı kullanılmalıdır.

Haberleşme Devresi Bağlantısı



- DMCNET bağlantısı: Kablolama malzemeleri standart özellikleri ile uyumlu olmalıdır.
- Çalışma boyunca, tüm vida, konnektör ve kabloların sıkılığı ve sağlam olduğuna emin olunuz. Aksi halde çalışmada anormallik meydana gelebilir.

Kontrol

Ürünü alırken olası yanlışlıkları önlemek için lütfen aşağıda yazılı olan maddeleri dikkatlice kontrol ediniz.

| Madde | İçerik |
|--|---|
| Ürünün satın aldığınız ürün olduğunu kontrol ediniz. | Kontrolör üzerindeki etikette belirtilen model adını model açıklamasına bakarak kontrol ediniz. |
| Tuş ve butonlar | Tüm butonları elle kontrol ediniz. Normal tuşlara yumuşakça basılabilir. |
| Görünüm | Ürünün görünüşünde çizik veya zarar olmadığını kontrol ediniz. |
| Vidalama | Sıkılmamış veya düşmüş vida olup olmadığını kontrol edilir. |

Yukarıdaki durumlardan herhangi biri meydana gelmiş ise firmamızla kontak kurunuz.

NC300 Serisi Kontrol Ünitesi ile Servo Sürücü

ASDA-A2 ve ASDA-M serisi uygulanabilen modeller ASD-A2-□□□□-N
ASD-A2-□□□□-NN, ve ASD-M-□□□□-N. Daha fazla bilgi için ASDA-A2 ve ASDA-M serisi kullanıcı manuellerni inceleyiniz.

Model Açıklaması

NC300A - M - A
(1) (2)(3) (4)

- (1) Ürün Adı
NC200: 3-Eksen 8-inch CNC kontrolör
NC300: 3-Eksen 8-inch CNC kontrolör
NC310: 3-Eksen 10-inch Yatay CNC kontrolör
NC311: 3-Eksen 10-inch Dikey CNC kontrolör
- (2) Uygulama
M: Frezeleme(Milling) uygulamaları içindir
- (3) Operatör Paneli
I: Bütünleşik tip: (1. ve 2. operatör paneli içerir)
S: Ayrık tip (2. Operator paneli dahili değildir)
- (4) Versiyon
A: Standart versiyon
AE: İngilizce versiyon

Aksesuarlar

| Parçalar | NC300A-MI-A_ | NC300A-MS-A_ NC311A-MS-A_ NC310A-MS-A_ | NC200A-MI-A_ | Amaç |
|---|--------------|--|--------------|---|
| 1ad 3-pin klemens | • | • | • | 24 V _{DC} güç beslemesi |
| 1ad sonlandırma direnci | • | • | • | DMCNET |
| 8 adet M3 vida ve somunları | • | • | • | Makinaya sabitlemek |
| 2 adet 15-pin erkek konnektör ve kapak seti. | • | • | | MPG ve SPINDLE |
| 1 adet erkek ve 1 adet dişi 15-pin konnektör ve 2ad kapak seti. | | | • | MPG ve SPINDLE |
| 1 adet 15-pin dişi konnektör ve kapak seti. | • | • | | AXIS |
| 1ad 5-pin klemens | | | • | İkincil panel üzerindeki X giriş kontağı için |
| 1ad 3-pin klemens | | | • | İkincil panel üzerindeki Y çıkış kontağı için |
| 2ad 6-pin klemens | | | • | HSI ve REMOTE I/O *1 |
| 1ad 2-pin klemens | •*2 | | •*3 | İkincil panel 24 VDC güç beslemesi için |

Not:

1. HSI: G31 yüksek hızlı giriş ve harici Acil Stop için konnektörlerdir.
REMOTE I/O: Yüksek-hızlı Seri I/O.
2. İkincil panel üzerindeki Cycle Start ve Feed Hold butonları içindir.
3. İkincil panel üzerindeki I/O içindir.

Saklama Ortam Koşulları

Kurulumu yapmadan önce, ürün nakliye kartonu içinde muhafaza edilmelidir. Ürün geçici olarak kullanılmıyacaksa ürünün bakımı ve garanti durumunun devamı için lütfen aşağıdaki direktifleri izleyiniz:

- Ürünü kuru ve toz olmayan yerlerde saklayınız. Ürünün düzgün paketlenip raf veya masa üzerinde saklanması tercih edilir.
- Ürünü -20°C - +60°C (-4°F - 140°F) sıcaklık aralığında saklayınız.
- Ürünü yoğunlaşmaz ortamda bağıl nem 10% - 95% aralığında saklayınız.
- Ürünü aşındırıcı gaz ve sıvıların olduğu ortamlarda saklamaktan kaçınınız.
- Ürünü özelliklerde belirtilen titreşim aralığının dışında olan ortamlarda saklamaktan kaçınınız.

Kurulum Ortam Koşulları

Çalışma sıcaklığı: 0°C ~ 55°C (32°F ~ 131°F)

Ürünün güvenli çalışma performansını sağlamak için uzun süreli çalışma esnasında ortam sıcaklığının 45°C (113°F)'nin altında olması önerilir. Eğer sıcaklık 45°C üzerinde ise lütfen ürünü aşırı ısınma olmaksızın iyi havalandırması olan bir elektrik panosu içerisine yerleştiriniz. Ayrıca elektrik panosunun içindeki elektronik cihazlara zarar verecek bir makine titreşiminin olmadığını da kontrol ediniz.

Garanti kapsamını korumak ve gelecekteki bakımı için lütfen aşağıdaki hususlara dikkat ediniz.

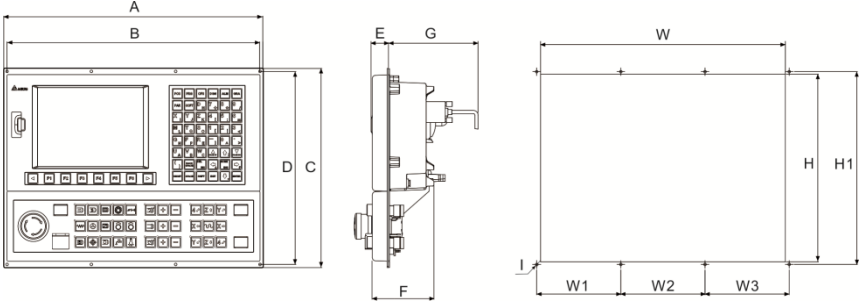
- Ürünün kurulumu aşırı-sıcaklık yayan nesnelere, su damlasının, buhar, toz, yağlı toz, aşındırıcı & yanıcı gazların ve metal parçacıkların olmadığı, titreşim ve elektromanyetik gürültüden uzak, kuru ve temiz yerlere yapılmalıdır.
- Kurulum yerinin ürün özelliklerinde belirtilen sıcaklık ve rutubet değerleri aralığında olduğundan emin olunuz.

Kurulum Metodu ve Boşluklar

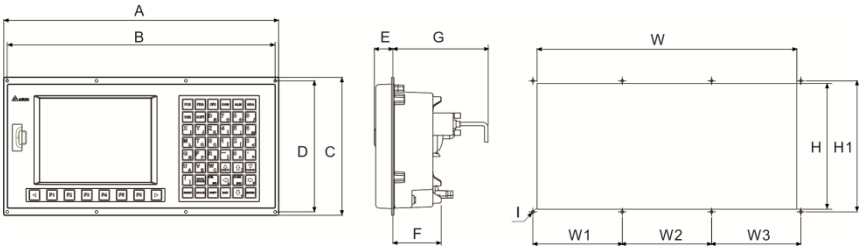
NC300 serisi kontrol ünitesi kurulumu NEMA standartlarına uyumlu kuru ve sağlam bir platform üzerine dikey olarak yapılmalıdır. İyi havalandırma ve etkili soğutma için servo sürücü(ler) ve bitişik nesnelere / bölümler (duvarlar) arasında gerekli boşluk bırakılmalıdır. (50mm veya 2 inch). Ayrıca bölümlerin (duvarlar) havalandırma boşluklarını kapatmayınız çünkü aşırı ısınma ürünün zarar görmesine neden olabilir.

Ölçüler

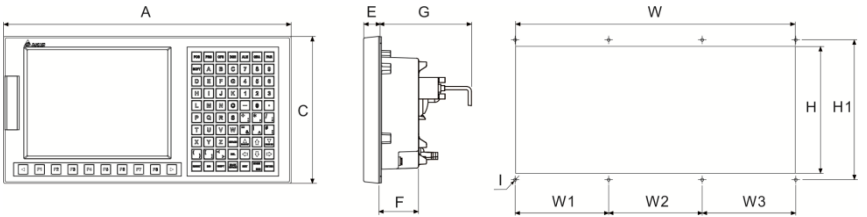
NC300A-MI-A / NC200A-MI-A ölçü işaretlemesi



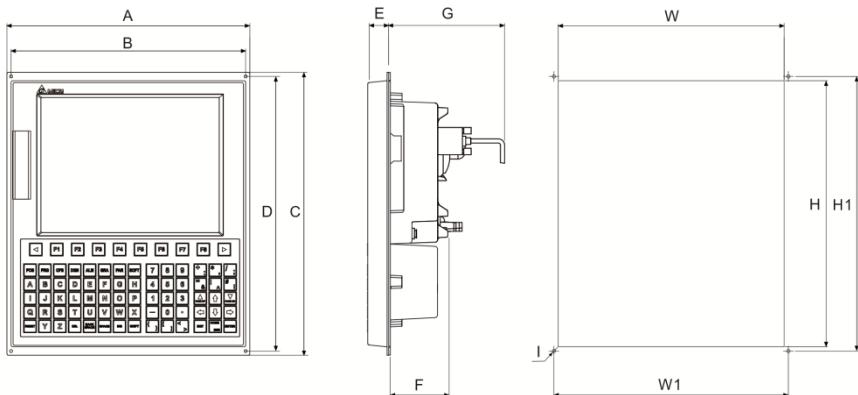
NC300A-MS-A ölçü işaretlemesi



NC310A-MS-A ölçü işaretlemesi



NC311A-MS-A_ ölçü işaretlemesi



Dış Boyutlar

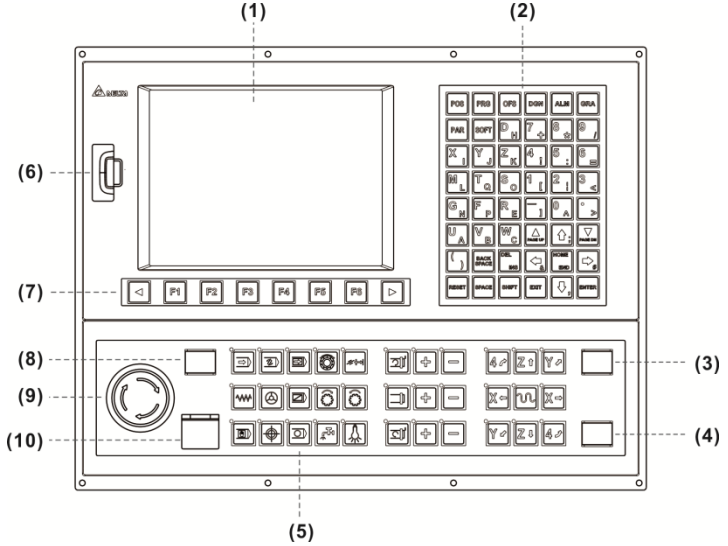
| Model / Boyut | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------------|-------------------------------|--------------|--------------|--------------|
| A | 400 mm | 400 mm | 290 mm | 435 mm |
| B | 390 mm | 390 mm | 280 mm | - |
| C | 309 mm | 200 mm | 335.5 mm | 221 mm |
| D | 299 mm | 190 mm | 325.5 mm | - |
| E | 25 mm | 25 mm | 23 mm | 23 mm |
| F | 70 mm | 70 mm | 70 mm | 70 mm |
| G | 130 mm (min) | 130 mm (min) | 130 mm (min) | 130 mm (min) |

Kesim Ölçüleri

| Model / Boyut | NC300A-MI-A_ /NC200A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ |
|---------------|-------------------------------|--------------|--------------|--------------|
| H | 291±0.3 mm | 182.5±0.3 mm | 315.5±0.3 mm | 191±0.3 mm |
| H1 | 299 mm | 190 mm | 325.5 mm | 210.4 mm |
| W | 378±0.3 mm | 378±0.3 mm | 270±0.3 mm | 423±0.3 mm |
| W1 | 130 mm | 130 mm | 280 mm | 141.47 mm |
| W2 | 130 mm | 130 mm | - | 141.47 mm |
| W3 | 130 mm | 130 mm | - | 141.47 mm |
| I | Φ 4 mm | Φ 4 mm | Φ 4 mm | Φ 4.5 mm |

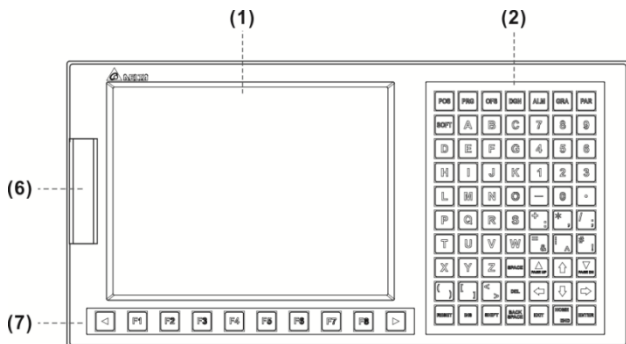
NC300 Serisi Kontrolör Genel Bakış

NC300A-MI-A_ (ön görünüm)



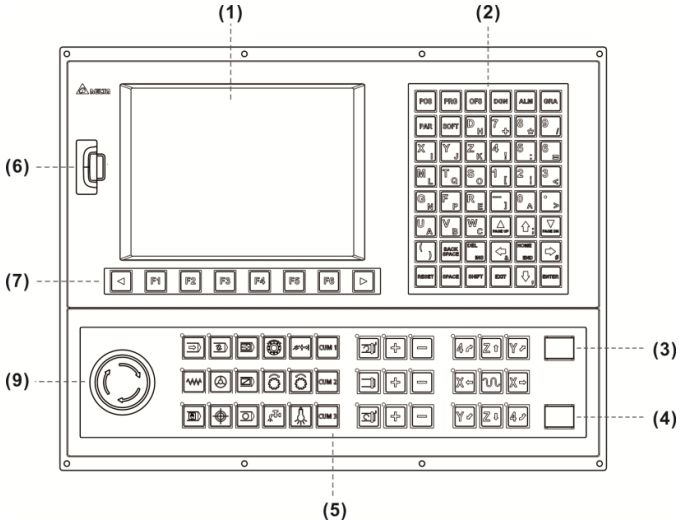
| No. | Madde |
|------|-------------------|
| (1) | Ekran |
| (2) | Birincil Panel |
| (3) | Cycle Start |
| (4) | Feed Hold |
| (5) | İkincil Panel |
| (6) | USB |
| (7) | Fonksiyon Tuşları |
| (8) | Power ON |
| (9) | Acil Stop |
| (10) | Power OFF |

NC310A-MS-A_ (ön görünüm)



| No. | Madde |
|-----|-------------------|
| (1) | Ekran |
| (2) | Birincil Panel |
| (6) | USB |
| (7) | Fonksiyon Tuşları |

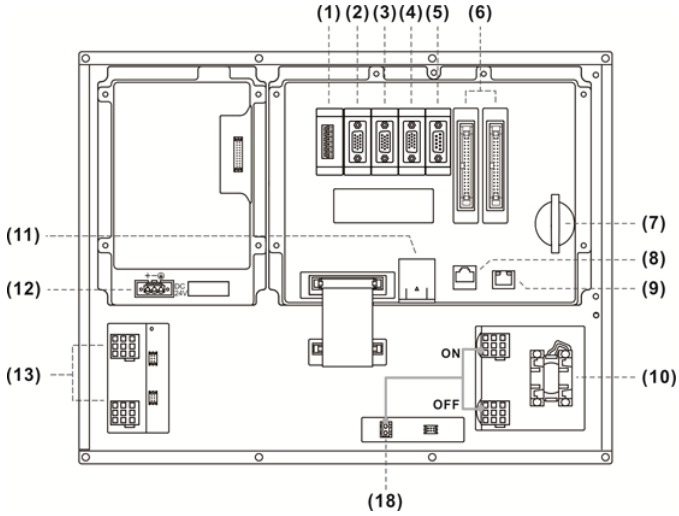
NC200A-MI-A_ (ön görünüm)



| No. | Madde |
|-----|-------------------|
| (1) | Ekran |
| (2) | Birincil Panel |
| (3) | Cycle Start |
| (4) | Feed Hold |
| (5) | İkincil Panel |
| (6) | USB |
| (7) | Fonksiyon Tuşları |
| (9) | Acil Stop |

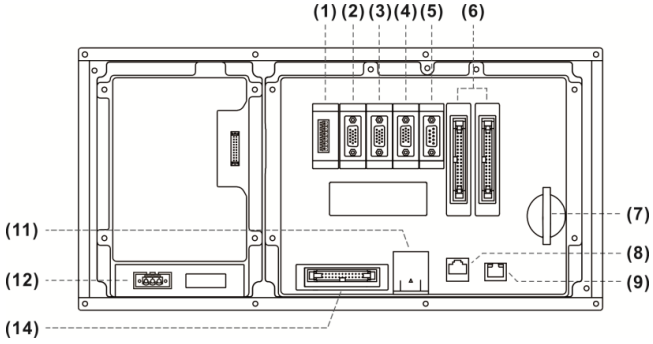
Haberleşme Arabirimi Genel Bakış

NC300A-MI-A_ (arka görünüm)



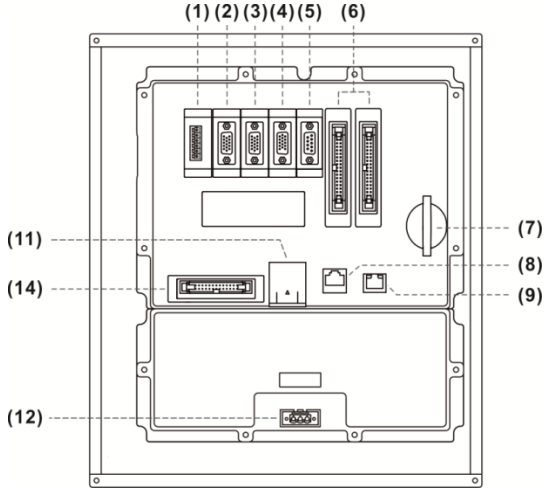
| No. | Madde |
|------|---|
| (1) | Uzak I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Lokal I/O |
| (7) | CF Kart |
| (8) | DMCNET |
| (9) | ETHERNET |
| (10) | Acil Stop |
| (11) | Pil Yuvası |
| (12) | 24 V _{DC} Besleme |
| (13) | Cycle Start / Feed Hold |
| (18) | İkincil Panel için 24 V _{DC} Besleme |

NC300A-MS-A_ (arka görünüm)



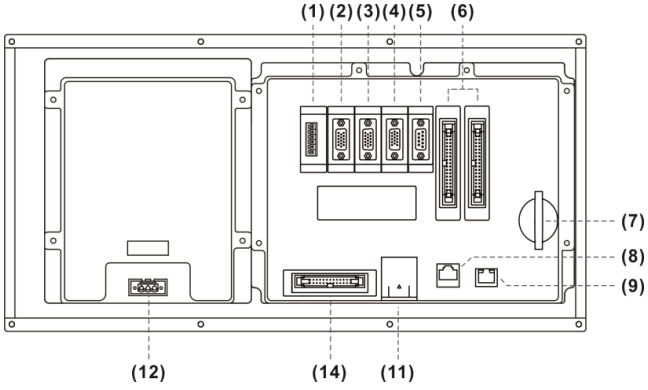
| No. | Madde |
|------|----------------------------|
| (1) | Uzak I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Lokal I/O |
| (7) | CF Kart |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Pil Yuvası |
| (12) | 24 V _{DC} Besleme |
| (14) | Tuş Takımı I/O |

NC311A-MS-A_ (arka görünüm)



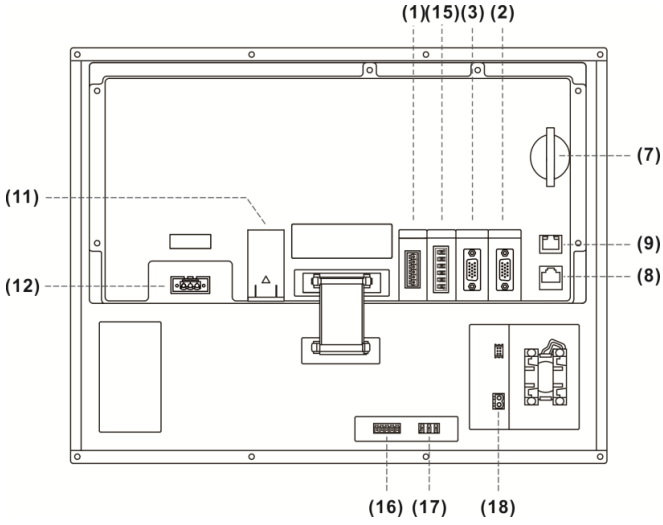
| No. | Madde |
|------|----------------------------|
| (1) | Uzak I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Lokal I/O |
| (7) | CF Kart |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | PİL Yuvası |
| (12) | 24 V _{DC} Besleme |
| (14) | Tuş Takımı I/O |

NC310A-MS-A_ (arka görünüm)



| No. | Madde |
|------|----------------------------|
| (1) | Uzak I/O |
| (2) | MPG |
| (3) | Spindle |
| (4) | Axis 1-4 |
| (5) | RS-485 |
| (6) | Lokal I/O |
| (7) | CF Kart |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Pil Yuvası |
| (12) | 24 V _{DC} Besleme |
| (14) | Tuş Takımı I/O |

NC200A-MI-A_ (arka görünüm)



| No. | Madde |
|------|---|
| (1) | Uzak I/O |
| (2) | MPG El Çarkı |
| (3) | Spindle |
| (7) | CF Kart |
| (8) | DMCNET |
| (9) | ETHERNET |
| (11) | Pil Yuvası |
| (12) | 24 V _{DC} Besleme |
| (15) | HSI |
| (16) | Lokal I/O Giriş |
| (17) | Lokal I/O Çıkış |
| (18) | İkincil Panel için 24 V _{DC} Besleme |

Özellikler

| Model | NC300A-MI-A_ | NC300A-MS-A_ | NC311A-MS-A_ | NC310A-MS-A_ | NC200A-MI-A_ |
|----------------------------|---|----------------|----------------|----------------|-----------------|
| Çalışma Ortamı | 10% ~ 95% RH [0 ~ +55°C] | | | | |
| Saklama Ortamı | 10% ~ 95% RH [-20 ~ +55°C] | | | | |
| Soğutma Metodu | Doğal soğutma | | | | |
| Voltaj | +24 V _{DC} (-10% ~ +15%) (dahili izoleli devre) | | | | |
| İzolasyon Direnci | 24 V _{DC} ve FG terminaleri arası: 500 V _{AC} , 1 dakika | | | | |
| Güç Tüketimi | 15 W (24 V; 0.6 A) | | | | |
| Backup Batarya | 3V lityum batarya CR2032 × 1 | | | | |
| Backup Batarya Ömrü | Ortam koşullarına ve sıcaklığa göre değişiklik gösterir; 25°C oda sıcaklığında yaklaşık 3 yıl | | | | |
| Ölçüler (W) x (H) x (D) mm | 400 x 309 x 123 | 400 x 200 x 97 | 290 x 335 x 95 | 435 x 221 x 95 | 400 x 309 x 123 |
| Ağırlık (kg) | 4.1 | 3.1 | 3.8 | 3.8 | 3.8 |