

STANDBY®

When attention matters.

MCS-NX-16 INSTALLATION GUIDE



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Pre-Installation & Required Tools

1.1) **Crimping Tool**

Universal Molex Crimp Tool.

Molex part number: 0638111000

- <http://www.digikey.co.uk/> Part Number: WM9999-ND
- <http://www.mouser.co.uk> Part Number: 538-63811-1000
- <http://uk.rs-online.com/> Part Number: 710-6499
- <http://www.ttieurope.com> Part Number: 63811-1000

Anderson PowerPole Crimp Tool

Anderson part number: 1309G4

- <http://www.digikey.co.uk/> Part Number: 2243-1309G4-ND
- <http://www.mouser.co.uk> Part Number: 879-1309G4

1.2) **Replacement Pins**

Mini Fit Female 50-34-8582 or 0039000211

- <http://www.digikey.co.uk/> Part Number: 0050348582-ND or WM14176CT-ND
- <http://www.mouser.co.uk> Part Number: 538-50-34-8582

Mega Fit Female 768230322

- <http://www.digikey.co.uk/> Part Number: WM11982TR-ND
- <http://www.mouser.co.uk> Part Number: 538-76823-0322

Anderson PP75 - 5900

- <http://www.digikey.co.uk/> Part Number: 2243-5900-ND
- <http://www.mouser.co.uk> Part Number: 879-5900

1.3) **Connector Receptacles**

Mini Fit Male 3-Way 39014031

- <http://www.digikey.co.uk/> Part Number: WM23608-ND
- <http://www.mouser.co.uk> Part Number: 538-39-01-4031

Mini Fit Male 2-Way 39013022

- <http://www.digikey.co.uk/> Part Number: WM1021-ND
- <http://www.mouser.co.uk> Part Number: 538-39-01-3022

Mini Fit Male 4-Way 39013042

- <http://www.digikey.co.uk/> Part Number: WM1022-ND
- <http://www.mouser.co.uk> Part Number: 538-39-01-3042

Mini Fit Male 6-Way	39012060
• http://www.digikey.co.uk/	Part Number: WM3702-ND
• http://www.mouser.co.uk	Part Number: 538-39-01-2060
Mini Fit Male 14-Way	39012140
• http://www.digikey.co.uk/	Part Number: WM3706-ND
• http://www.mouser.co.uk	Part Number: 538-39-01-2140
Mega Fit Male 2-Way	171692-0102
• http://www.digikey.co.uk/	Part Number: WM10385-ND
• http://www.mouser.co.uk	Part Number: 538-171692-0102
Mega Fit Male 4-Way	171692-0104
• http://www.digikey.co.uk/	Part Number: WM10386-ND
• http://www.mouser.co.uk	Part Number: 538-171692-0104
Anderson PP75	5916G7-BK
• http://www.digikey.co.uk/	Part Number: 2243-5916G7-BK-ND
• http://www.mouser.co.uk	Part Number: 879-5916G7-BK

1.4) ***MHE Replacement Connector Pack***

2021019	MCS-NX-16 Pins and Connector Pack
2021019-S	MCS-NX-16S Pins and Connector Pack

2.1) ***Installation Requirements***

- 2.1.1) Each power connector (Anderson PowerPole) must be fused with a fuse rated to 70A or less.
- 2.1.2) DO NOT obstruct fan vents along the side of the MCS-NX-16. Do not install any equipment on top or underneath the MCS-NX-16.

The above installation requirement must be followed for safe operating and extended product lifetime

3.1) **Mounting**

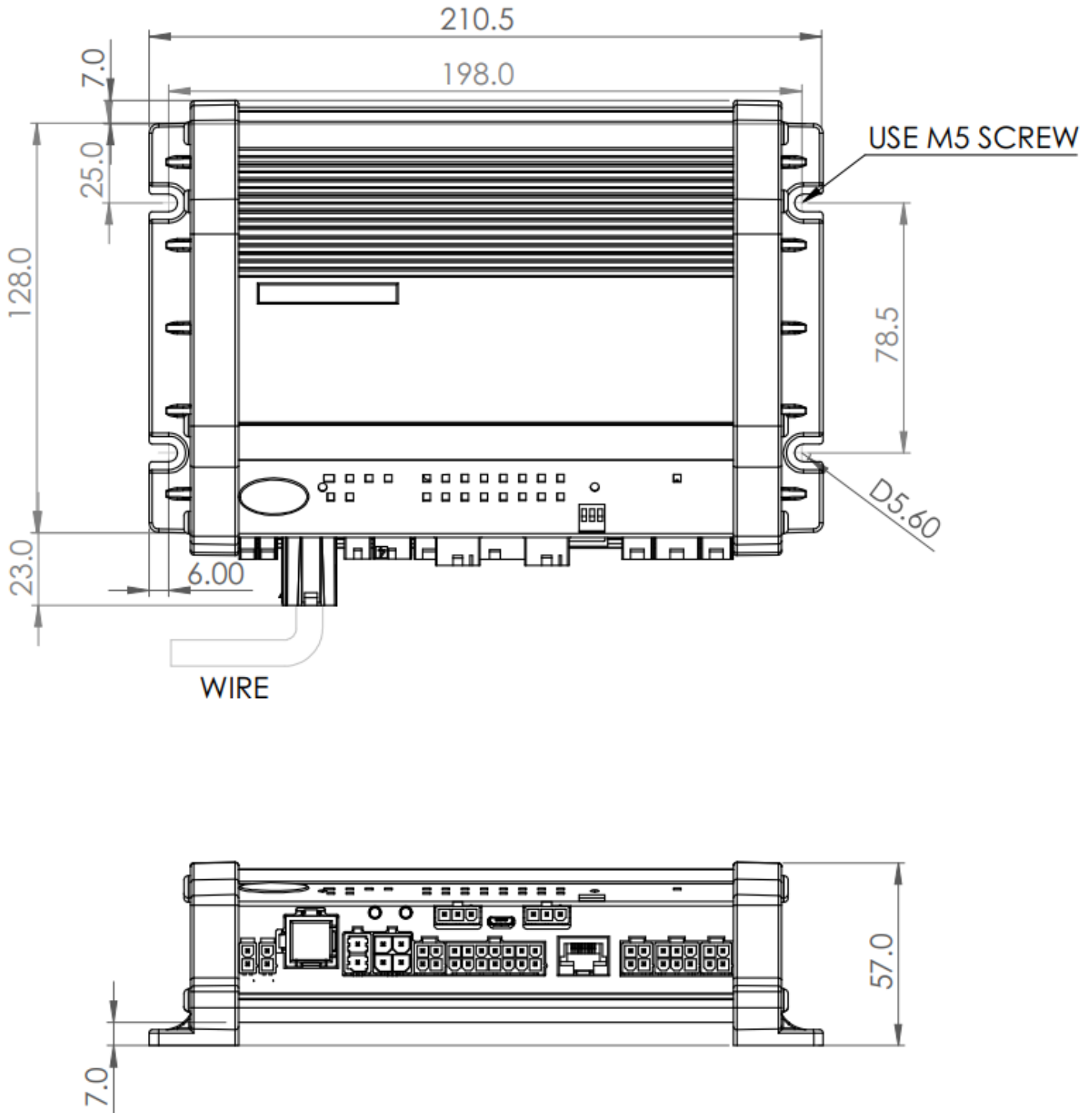


Figure 1 Dimensions and Mounting holes

4 x M4 holes are supplied for mounting the unit to a base panel.

4.1) **Wiring**

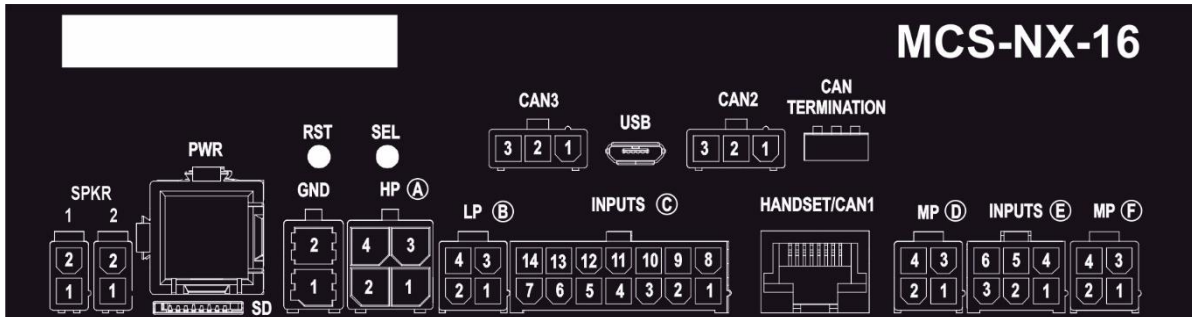


Figure 2 Connector Layout

4.1.1) **SPKR1- Siren Output**

Pin	Name	Function
1	Siren Output +	Siren Output for connection of Siren speaker
2	Siren Output -	Siren Output for connection of Siren speaker

4.1.2) **SPKR2 - Internal\Cab Output**

Pin	Name	Function
1	Internal Speaker +	Internal Speaker Output for connection of a low power speaker +- 5W
2	Internal Speaker -	Internal Speaker Output for connection of a low power speaker +- 5W

4.1.3) **PWR - Power Connection**

Pin	Name	Function
1	Supply	12-24V supply

4.1.4) **GND - Power Ground**

Pin	Name	Function
1	Ground A	Chassis ground
2	Ground B	Chassis ground

4.1.5) Connector A - High Power Outputs

Pin	Function	Function
1	High Power Output 1	User define Output (Positive Switched 20A)
2	High Power Output 2	User define Output (Positive Switched 20A)
3	High Power Output 3	User define Output (Positive Switched 20A)
4	High Power Output 4	User define Output (Positive Switched 20A)

4.1.6) Connector B- Low Power Outputs

Pin	Name	Function
1	Low Power Output 1	User Defined Low Power Outputs (Positive or Negative 2.5A)
2	Low Power Output 2	User Defined Low Power Outputs (Positive or Negative 2.5A)
3	Low Power Output 3	User Defined Low Power Outputs (Positive or Negative 2.5A)
4	Low Power Output 4	User Defined Low Power Outputs (Positive or Negative 2.5A)

4.1.7) Connector C - Input Connector

Pin	Name	Function
1	Radio In +	Positive input for Radio re-broadcast
2	CAN1 H	CAN bus High connection
3	CAN1 L	CAN bus Low connection
4	External Reset	Positive switched Reset input
5	Universal Input 2	User defined input (pull-up or pull-down through 8.2kΩ or analogue)
6	Universal Input 4	User defined input (pull-up or pull-down through 8.2kΩ or analogue)
7	Universal Input 6	User defined input (pull-up or pull-down through 10kΩ or analogue)
8	Radio In -	Negative input for Radio re-broadcast
9	Ground	Chassis
10	Supply Output (Fused)	Supply feed through for external devices (4A Fused)
11	External Standby	Negative switched Standby input
12	Universal Input 1	User defined input (pull-up or pull-down through 8.2kΩ or analogue)
13	Universal Input 3	User defined input (pull-up or pull-down through 8.2kΩ or analogue)
14	Universal Input 5	User defined input (pull-up or pull-down through 10kΩ or analogue)

4.1.8) HANDSET/CANI - System Connector

Pin	Name	Function
1	CAN1L	CAN bus Low connection (CAN-FD)
2	CAN1H	CAN bus High connection (CAN-FD)
3	MIC-	Negative Microphone input signal
4	Supply	Supply feed through for handsets (1A Fused)
5	Ground	Chassis
6	MIC+	Positive Microphone input signal
7	No Connection	-
8	PTT	Push to Talk

4.1.9) Connector D - Medium Power Outputs

Pin	Name	Function
1	Medium Power Output 9	User Defined Medium Power Outputs (Positive Switched 8A)
2	Medium Power Output 10	User Defined Medium Power Outputs (Positive Switched 8A)
3	Medium Power Output 11	User Defined Medium Power Outputs (Positive Switched 8A)
4	Medium Power Output 12	User Defined Medium Power Outputs (Positive Switched 8A)

4.1.10) Connector E - Input Connector

Pin	Name	Function
1	Positive Input 10	User defined input (pull-down through 11kΩ)
2	No Connection	-
3	Positive Input 8	User defined input (pull-down through 11kΩ)
4	Positive Input 9	User defined input (pull-down through 11kΩ)
5	No Connection	-
6	Positive Input 7	User defined input (pull-down through 11kΩ)

4.1.11) Connector F- Medium Power Outputs

Pin	Name	Function
1	Medium Power Output 13	User Defined Medium Power Outputs (Positive Switched 8A)
2	Medium Power Output 14	User Defined Medium Power Outputs (Positive Switched 8A)
3	Medium Power Output 15	User Defined Medium Power Outputs (Positive Switched 8A)
4	Medium Power Output 16	User Defined Medium Power Outputs (Positive Switched 8A)

4.1.12) CAN3\RS485 Connector

Pin	Name	Function
1	CAN3H\RS485A	CAN3 High (CAN-FD) or RS485A connection
2	No Connection	-
3	CAN3L\RS485B	CAN3 Low (CAN-FD) or RS485B connection

4.1.13) USB

Used with the MCS Configurator for programming the device

<https://mheupdate.blob.core.windows.net/mcsc3/Install/setup.exe>

4.1.14) CAN2 Connector

Pin	Name	Function
1	CAN2H	CAN2 High (CAN-FD)
2	No Connection	-
3	CAN2L	CAN2 Low (CAN-FD)

4.1.15) RST - Reset Button

Button for resetting of the unit.

4.1.16) SEL - Select Button

Button for selecting what information is displayed by the LEDs on the unit.

4.1.17) DIP SELECT - CAN Termination

Switch	Name	Function
1	CAN1 Termination	Activates a termination resistor on CAN bus 1 (120Ω)
2	CAN3 Termination	Activates a termination resistor on CAN bus 3 (120Ω)
3	CAN2 Termination	Activates a termination resistor on CAN bus 2 (120Ω)

4.1.18) SD – SD card slot

SD Card slot for insertion of an SD.

5.1) **Version History**

Version	Changes	Responsible Person(s)	Date
1V0	Initial document release	KJVR	2021/06/17
1V1	Added Images and drawings	KJVR	2021/06/23
1V2	Updated Connector labelling	KJVR	2021/07/02
1V3	Added Connector Receptacles list	KJVR	2021/07/07
1V4	Corrected Connector E and updated Input descriptions	KJVR	2021/07/08
1V5	Added Connector Pack details and Updated Connector details	KJVR	2022/05/04
1V6	Added no Connection to the CAN connectors	KJVR	2022/05/12