STANDBY®

When attention matters.

MCS-NX-32
INSTALLATION GUIDE

E11 **10R-0213006**

C-10749-A_MDX00069_HW03/25

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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 8-Way 39012080

- http://www.digikey.co.uk/ Part Number: WM3703-ND
- http://www.mouser.co.uk Part Number: 538-39-01-2080

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*

2021040	MCS-NX-32 Pins and Connector Pack
2021040-S	MCS-NX-32S 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-32. Do not install any equipment on top or underneath the MCS-NX-32.

2.1.3) The MCS system uses 6 pin RJ11 connectors and the MCS-NX uses RJ45 8 pin connectors, they utilize the same handsets and external CAN devices. Make sure you do not insert a RJ11 6 pin connector into the RJ45 8 way port. This will damage the pins and cause the CAN1 to go faulty on that connector. The above label is placed over the RJ45 connector on the MCS-NX to avoid this.

2.1.4) When connecting the power supply to the MCS-NX unit please ensure that the red connectors are seated correctly to avoid causing operational issues. For a short demonstration video click on the image above or go to https://www.youtube.com/shorts/nryPMNy-Mcc .

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

3.1) *Mounting*

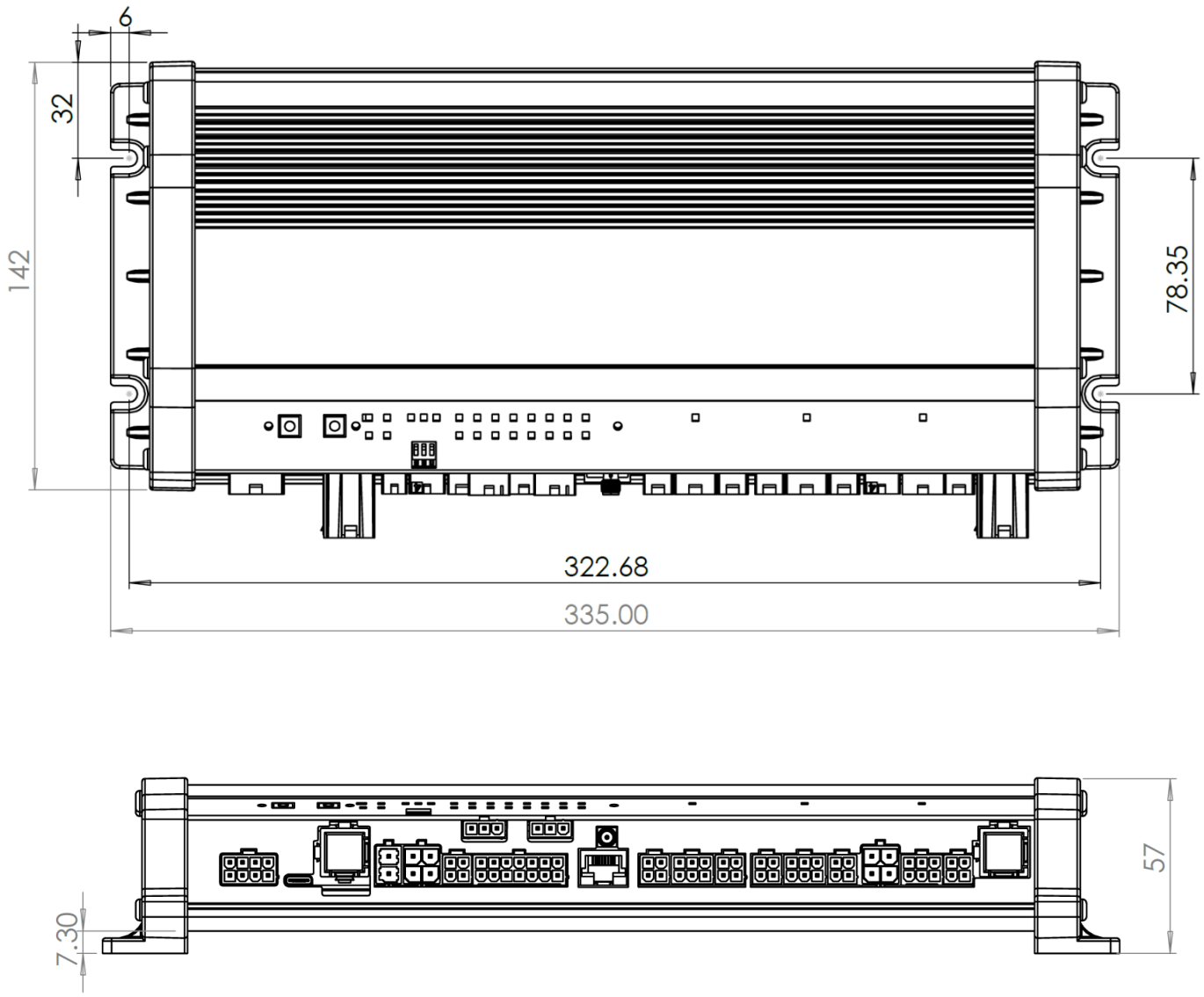

Figure 1 Dimensions and Mounting holes

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

4.1) *Wiring*

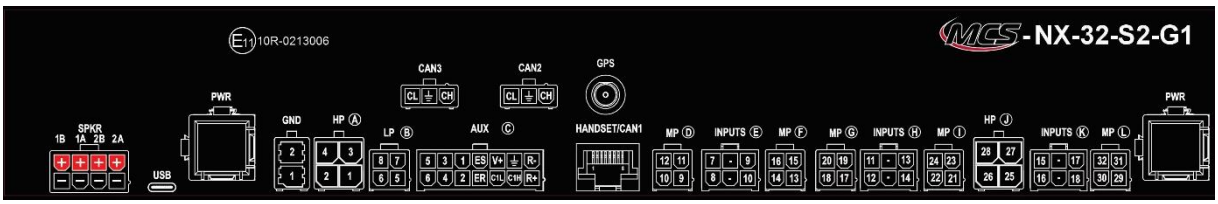

Figure 2 Connector Layout

4.1.1) GPS

Pin	Name	Function
1	GPS	Connection for Active Antenna for GPS function (designated by G1)

4.1.2) SPKR -Siren Output (S1 and S2)

Pin	Name	Function
1	2A-	Speaker 2 Channel A Negative Output
2	2B-	Speaker 2 Channel B Negative Output
3	1A-	Speaker 1 Channel A Negative Output
4	1B-	Speaker 1 Channel B Negative Output
5	2A+	Speaker 2 Channel A Positive Output
6	2B+	Speaker 2 Channel B Positive Output
7	1A+	Speaker 2 Channel A Positive Output
8	1B+	Speaker 2 Channel B Positive Output

4.1.3) PWR - Power Connection

Pin	Name	Function
1	Supply	12-24V supply for Connectors A-F

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	Name	Function
1	High Power Output 1	User Defined High Power Output (Positive Switched 20A)*Note1
2	High Power Output 2	User Defined High Power Output (Positive Switched 20A)*Note1
3	High Power Output 3	User Defined High Power Output (Positive Switched 20A)
4	High Power Output 4	User Defined High Power Output (Positive Switched 20A)

Note 1 : HP1 and HP2 can be combined to achieve 30A by wiring HP1 and HP2 to the load in parallel. This is enabled in the configuration software.

4.1.6) Connector B- Low Power Outputs

Pin	Name	Function
1	Low Power Output 5	User Defined Low Power Outputs (Positive or Negative 2.4) *Note2
2	Low Power Output 6	User Defined Low Power Outputs (Positive or Negative 2.4A) *Note2
3	Low Power Output 7	User Defined Low Power Outputs (Positive or Negative 2.4A) *Note2
4	Low Power Output 8	User Defined Low Power Outputs (Positive or Negative 2.4A) *Note2

Note 2 : all low power outputs when placed in drive low mode have a 800µA quiescent current. This may cause false triggering in very light loads. This can be remedied by placing a 1kΩ resistor across the load.

4.1.7) Connector C - Aux 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/CAN1 - 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	NC	No connect
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) Connector G - Medium Power Outputs

Pin	Name	Function
1	Medium Power Output 17	User Defined Medium Power Outputs (Positive Switched 8A)
2	Medium Power Output 18	User Defined Medium Power Outputs (Positive Switched 8A)
3	Medium Power Output 19	User Defined Medium Power Outputs (Positive Switched 8A)
4	Medium Power Output 20	User Defined Medium Power Outputs (Positive Switched 8A)

4.1.13) Connector H - Input Connector

Pin	Name	Function
1	Positive Input 14	User defined input (pull-down through 11kΩ)
2	No Connection	-
3	Positive Input 12	User defined input (pull-down through 11kΩ)
4	Positive Input 13	User defined input (pull-down through 11kΩ)
5	No Connection	-
6	Positive Input 11	User defined input (pull-down through 11kΩ)

4.1.14) Connector I- Medium Power Outputs

Pin	Name	Function
1	Medium Power Output 21	User Defined Medium Power Outputs (Positive Switched 8A)
2	Medium Power Output 22	User Defined Medium Power Outputs (Positive Switched 8A)
3	Medium Power Output 23	User Defined Medium Power Outputs (Positive Switched 8A)
4	Medium Power Output 24	User Defined Medium Power Outputs (Positive Switched 8A)

4.1.15) Connector J - High Power Outputs

Pin	Function	Function
1	High Power Output 25	User Defined High Power Output (Positive Switched 20A)
2	High Power Output 26	User Defined High Power Output (Positive Switched 20A)
3	High Power Output 27	User Defined High Power Output (Positive Switched 20A)
4	High Power Output 28	User Defined High Power Output (Positive Switched 20A)

4.1.16) Connector K - Input Connector

Pin	Name	Function
1	Positive Input 18	User defined input (pull-down through 11kΩ)
2	No Connection	-
3	Positive Input 16	User defined input (pull-down through 11kΩ)
4	Positive Input 17	User defined input (pull-down through 11kΩ)
5	No Connection	-
6	Positive Input 15	User defined input (pull-down through 11kΩ)

4.1.17) Connector L - Medium Power Outputs

Pin	Name	Function
1	Medium Power Output 29	User Defined Medium Power Outputs (Positive Switched 8A)
2	Medium Power Output 30	User Defined Medium Power Outputs (Positive Switched 8A)
3	Medium Power Output 31	User Defined Medium Power Outputs (Positive Switched 8A)
4	Medium Power Output 32	User Defined Medium Power Outputs (Positive Switched 8A)

4.1.18) PWR - Power Connection

Pin	Name	Function
1	Supply	12-24V supply for Connectors G-L

4.1.19) 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

4.1.20) USB-C (Micro Rev1)

Used with the MCS-NX-CONFIG for programming the device
http://mheupdate.blob.core.windows.net/mcsnx-config-update/mcsnx-config-install.exe

4.1.21) CAN2 Connector

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

4.1.22) RST - Reset Button

Button for resetting of the unit.

4.1.23) SEL - Select Button

Button for selecting what information is displayed by the LEDs on the unit. Also used to force the unit into bootloader mode.

4.1.24) DIP SELECT - CAN Termination

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

4.1.25) 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	2022/05/10
1V1	Added no connection to the CAN connectors	KJVR	2022/05/12
1V2	Updated connector information	KJVR	2025/01/10
1V3	Updated the Dimensional drawing and render	KJVR	2025/01/23