



CURTIS



Medical Mobility

enAble<sup>®</sup> X1

Power Wheelchair Control System





## OVERVIEW

The enAble® X1 Power Wheelchair Control System is designed to seamlessly integrate into any power wheelchair, offering unparalleled customization and advanced rehab seating solutions. From anterior tilt to full standing capabilities, the enAble X1 delivers high-end features, easily configurable to meet the unique medical needs and personal preferences of each user. With its plug-and-play design, this sophisticated system allows rehab chair OEMs to provide comprehensive, market-leading features and functionality, while the scalable, modular approach delivers cost-effective solutions for rehab chairs of all types and configurations. Whether you require advanced technology for environmental control or durable systems for reliability, Curtis is the electric mobility partner that ensures your power wheelchair excels in comfort, functionality, and style.

### Power Modules:

- ▶ Offers a range from 75A to 120A.
- ▶ All modules include full Gyroscope functionality.
- ▶ Motor encoder supported in PB 120.
- ▶ Supports Rear, Mid and Front wheel drive wheelchairs.
- ▶ Some modules include two additional seating functions.

### Drive Control Options:

- ▶ Basic LED display version of the hand control.
- ▶ LCD version for more advanced control.
- ▶ Interface system and Display Module for Specialty Control inputs.
- ▶ Provides excellent drive control and fully independent drive profiles for each possible drive device.

### Seating and Lighting Modules:

- ▶ Control of complex, multi-axis seating functions.
- ▶ 2, 3, and 5 channel actuator modules available; maximum 10 channels in one system.
- ▶ Memory seating positions available for advanced feedback seating systems.
- ▶ Lighting options for both bulb and LED lights.

### Attendant Control and Customizable I/O:

- ▶ Options for Attendant Control driving.
- ▶ Fully customizable I/O devices for quick and easy access to essential functions.

### Bluetooth Programmability:

- ▶ Cable-free programming via the Econ suite of programming tools.
- ▶ Options available for Microsoft® Windows, Apple® iOS, and Android™ (coming soon).
- ▶ Remote diagnostics and programmability available.

### Built-in Bluetooth Assistive Technology:

- ▶ Options for mouse, Assistive Switch Control, and Joystick Emulation.
- ▶ Works with Microsoft® Windows, Apple® iOS, and Android™ devices.





## HAND CONTROLS

The eX1 system has multiple input devices. The standard input devices are the Hand Control Standard (HCS-x1) and the Hand Control Basic family (HCB-x-x1). Bluetooth standard across the range.



HCS-x1



HCB-AL-x1



HCB-A-x1



HCB-x1

## TECHNICAL DATA

Feature Offering	HCS-x1	HCB-AL-x1	HCB-A-x1	HCB-x1
Part Number	17969700-2511	17968700-4311	17968700-4211	17968700-4011
LCD Display/Resolution	Yes/2.3" COLOR TFT 320XRGBX240	No	No	No
LED Display	No	Yes	Yes	Yes
Jack Sockets	2 x Stereo Sockets	1 x Stereo Sockets	1 x Stereo Sockets	1 x Stereo Sockets
USB Charger Point (5V 3A)	Yes	Yes	Yes	Yes
XLR Charger Option	Yes	Yes	Yes	Yes
Magnetic Charger Option	Yes	Yes	Yes	Yes
Actuator Control	Yes (5+)	Yes (Max 5)	Yes (Max 5)	No
Lighting Control	Yes	Yes	No	No
Assignable Keypad Functions	Yes (3 per Profile)	Yes (x2)	Yes (x2)	No
Bluetooth Programmability	Yes	Yes	Yes	Yes
Bluetooth Assistive Technology	Yes (Coming Soon)	No	No	No
Joystick Control	Proportional & Switched	Proportional & Switched	Proportional & Switched	Proportional & Switched

## MAGNETIC CHARGER

The enAble x1 handcontrols are fitted with both an XLR and the new Magnetic Charger option. This option coupled with the new development of mounting the charger point to the side of the handcontrol, makes the system the easiest and most ergonomic option for users.

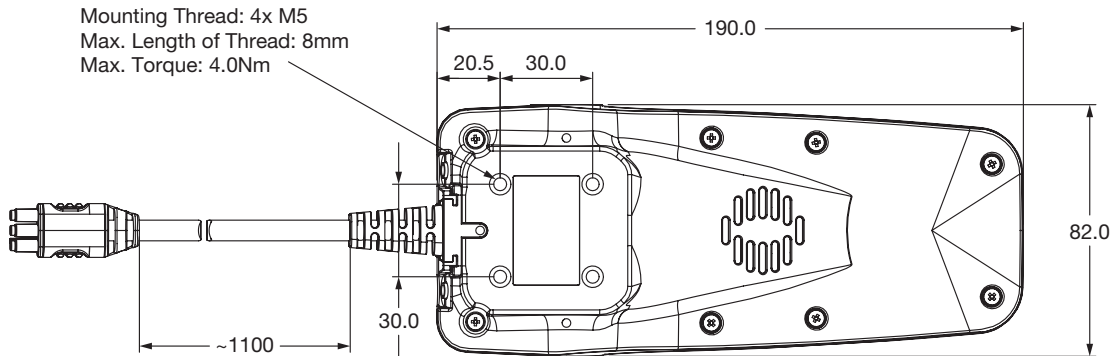


The standard XLR charger and new magnetic charger

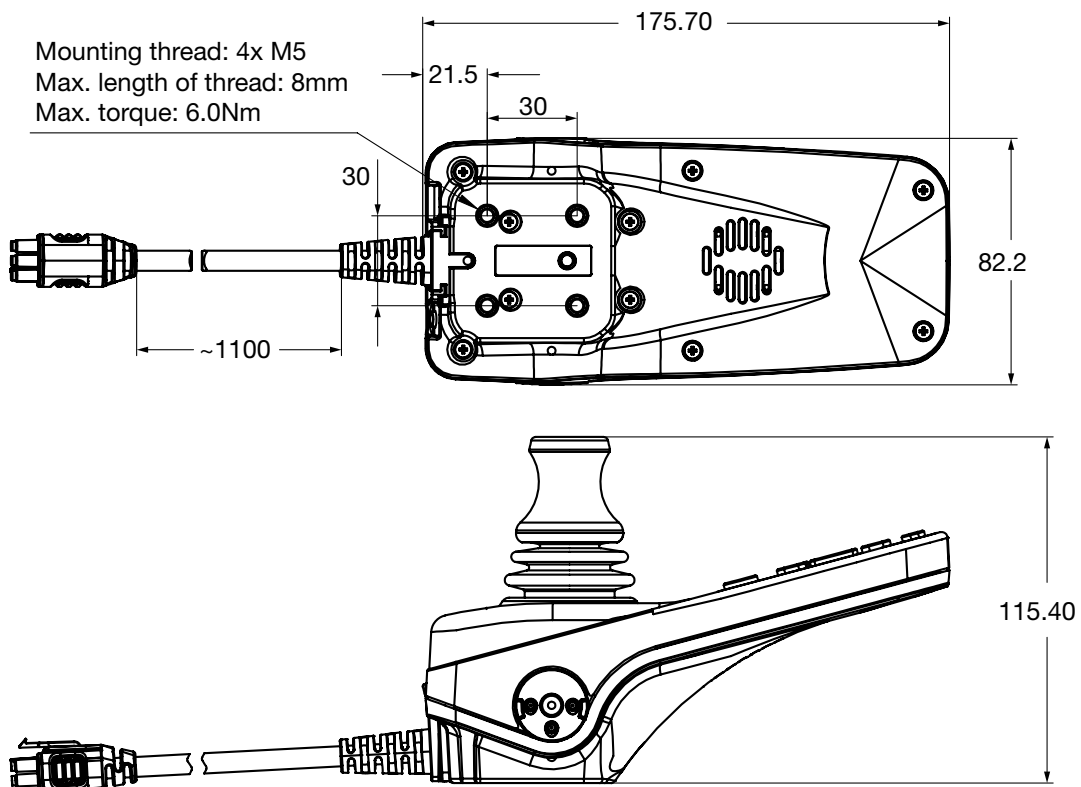


## DIMENSIONS mm

### Hand Control Standard (HCS)



### Hand Control Basic (HCB)





## POWERBASES



PB120-x1



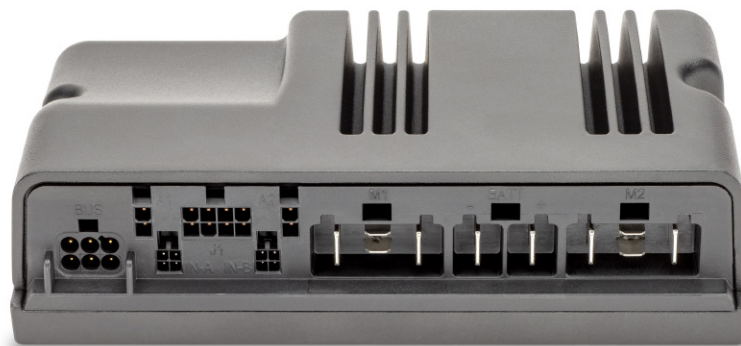
PB75/PB90-A2-x1



PB75/PB90-x1

## TECHNICAL DATA

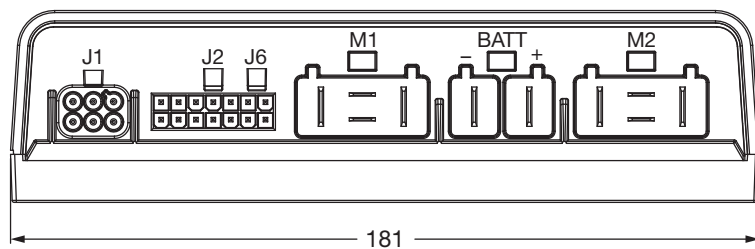
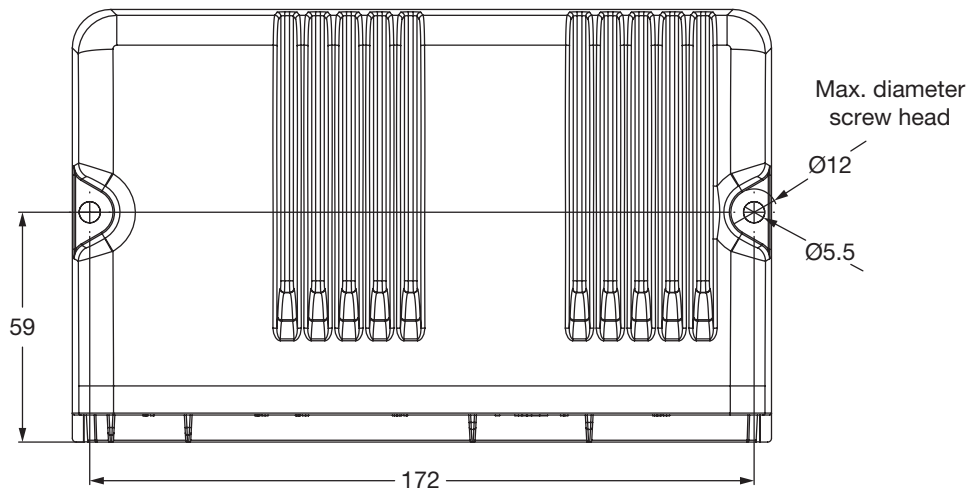
Feature Offering	PB120-x1	PB90-A2-x1	PB75-A2-x1	PB90-x1	PB75-x1
Part Number	17930700-3501	17958700-2201	17958700-1201	17958700-2001	17958700-1001
Max Motor Current	120A	90A	75A	90A	75A
Built In Gyroscope	Yes	Yes	Yes	Yes	Yes
Motor Encoder Support	Yes	No	No	No	No
No of Actuator Outputs	0	2	2	0	0
Onboard Charger Option	Yes	Yes	Yes	Yes	Yes
Actuator Position Feedback	N/A	Yes	Yes	N/A	N/A
Actuator Switch Feedback	N/A	Yes	Yes	N/A	N/A
Built In Accelerometer	Yes	Yes	Yes	Yes	Yes
Programmable Switch Inputs	2	2	2	2	2



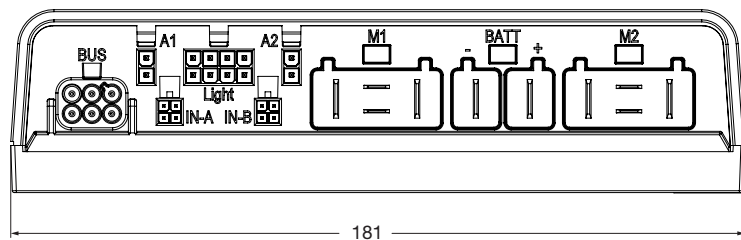
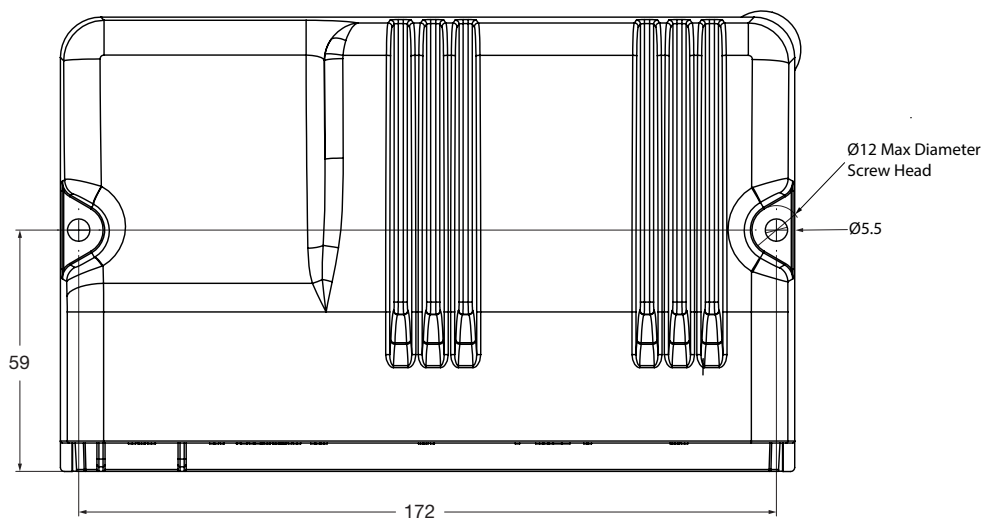


## DIMENSIONS mm

### Power Base (PB120)



### Power Base (75/90)





## ACTUATOR AND LIGHTING MODULES



AAM5-x1



AM3-x1 and AM3L-x1



AAM2L-x1



LML-x1

## TECHNICAL DATA

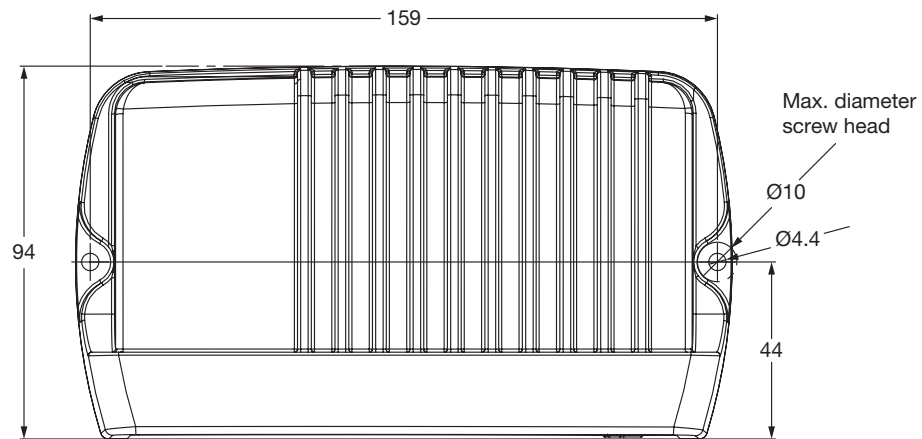
Feature Offering	AAM5-x1	AM3-x1	AM3L-x1	AAM2L-x1	LML-x1
Part Number	17952700-5001	17970700-5001	17970700-5201	17963700-2101	17971700-0201
Peak Actuator Current	15A	12A	12A	15A	N/A
Built In Lighting Option	No	No	Yes	Yes	Yes
No of Actuator Outputs	5	3	3	2	0
Actuator Position Feedback	Yes	Yes	Yes	Yes	N/A
Actuator Switch Feedback	Yes	Yes	Yes	Yes	N/A
Built In Accelerometer	Yes	Yes	Yes	Yes	N/A
Peak Lighting Current	N/A	N/A	1A (LED)	2A (LED & Bulb)	1A (LED)
Programmable Switch Inputs	10	0	0	0	0



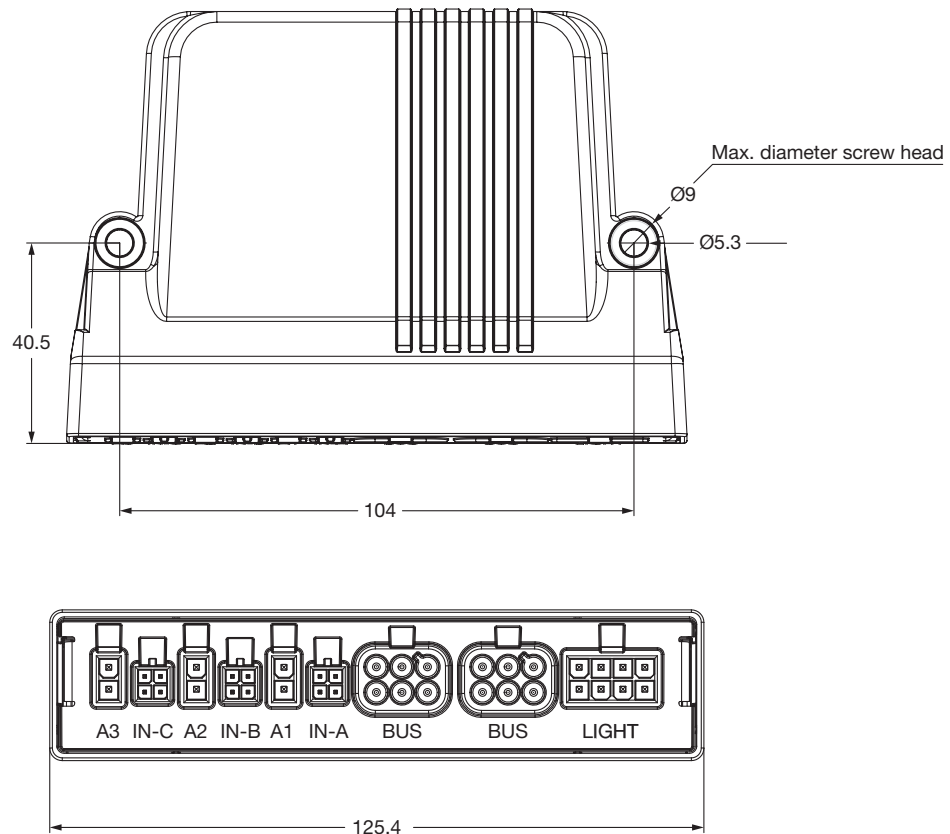


## DIMENSIONS mm

### Actuator (AAM5)



### Actuator (AM3 / AM3L)

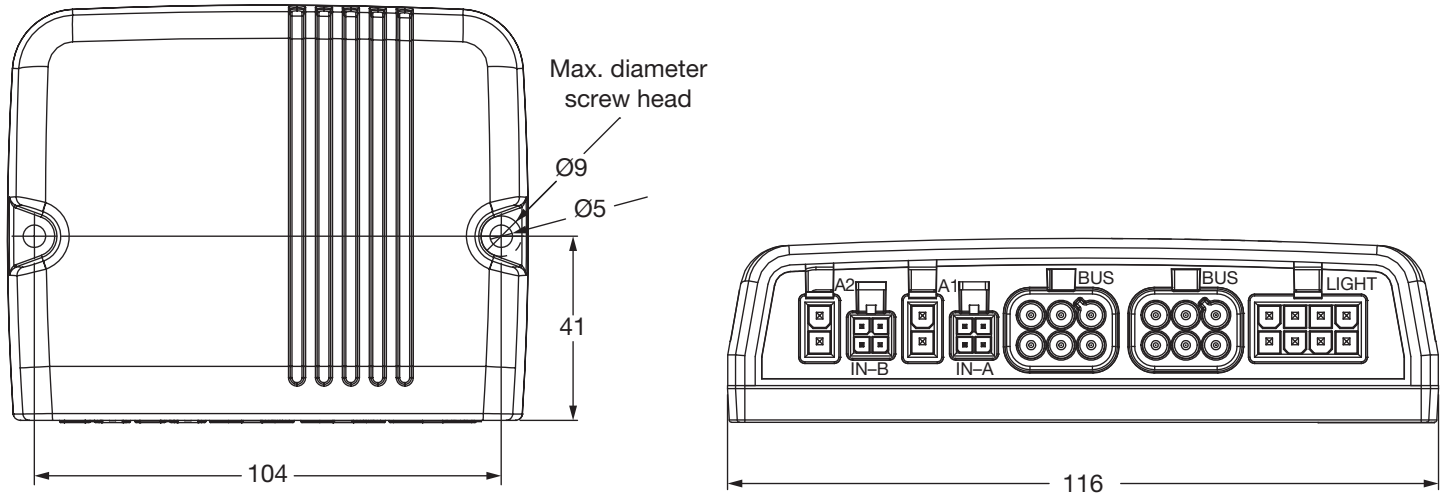




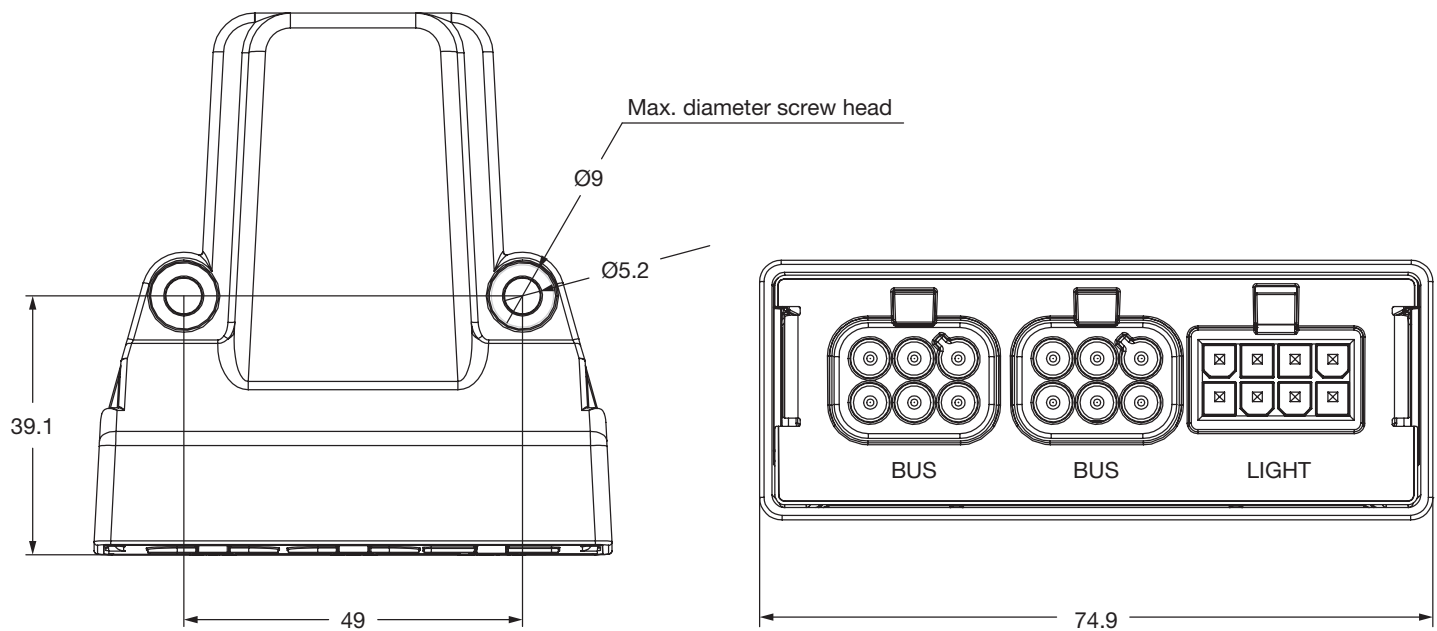


## DIMENSIONS mm

### Actuator (AAM2L)



### Light Module (LML)

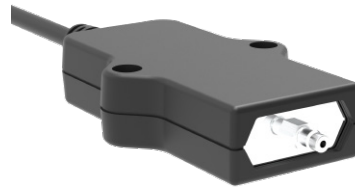




## SPECIAL CONTROL MODULES



DM-x1



SPM-x1



SCIM-x1

**Note:** the DM (Display Module) can be used with the HCS-x1 to enhance functions within the Hand Control, and also as a Display Control Module for the SCIM (Special Control Input) and SPM (Sip and Puff) Modules.

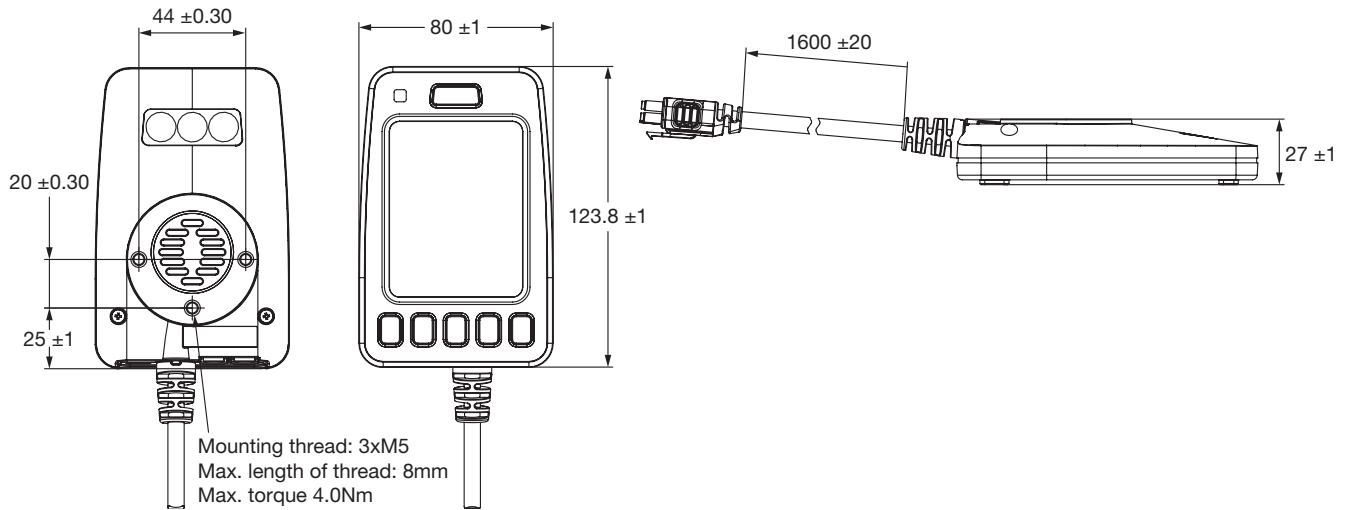
## TECHNICAL DATA

Feature Offering	DM-x1	SCIM-x1	SPM-x1
Part Number	17974700-1401	17950700-1001	17961700-0001
LCD Display/Resolution	Yes/3.5" COLOR TFT 320XRGBX240 BL	No	No
Jack Sockets	2 x Stereo sockets	No	No
USB Charger Point (5V 3A)	Yes	No	No
Actuator Control	Yes (5+)	N/A	N/A
Lighting Control	Yes	N/A	N/A
Bluetooth Programmability	Yes	N/A	N/A
Bluetooth Assistive Technology	Yes	N/A	N/A
Joystick control	Proportional. Switched and 3 Way	N/A	N/A
9 Pin D-Sub Connection	No	Yes - Special controls	No
Pressure Control input	No	No	Yes

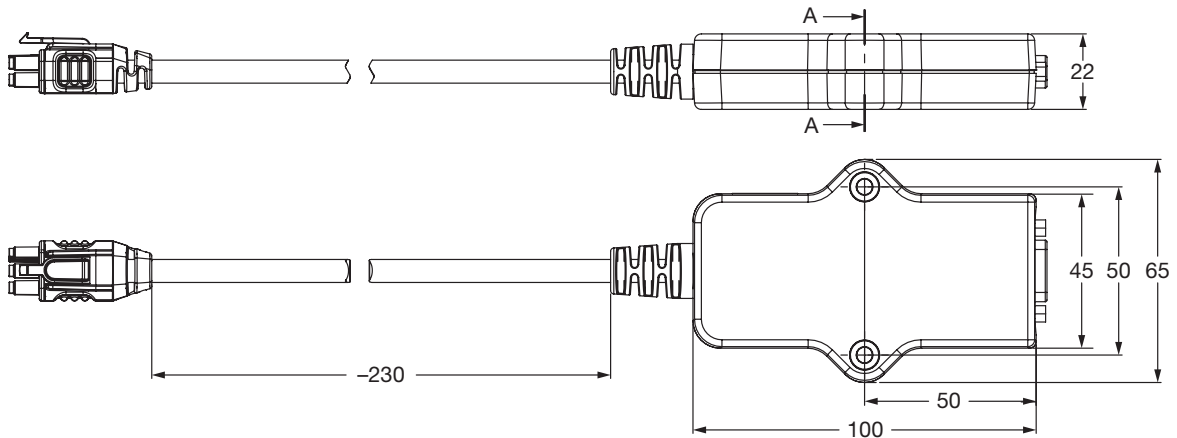


## DIMENSIONS mm

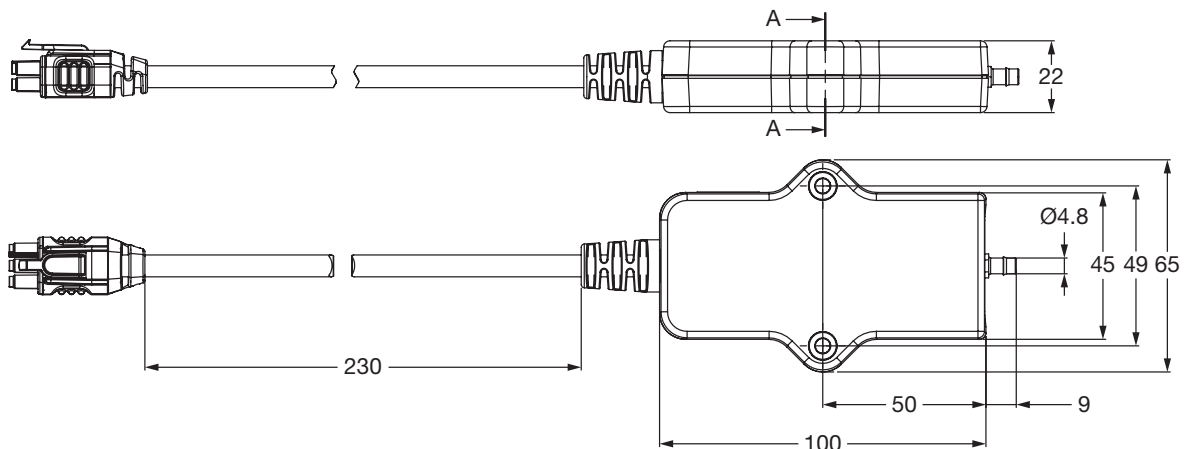
### Display Module (DM)



### Special Control Input Module (SCIM)



### Sip and Puff Module (SPM)





## ACCESSORY MODULES



AC-x1



ESM8-F-x1



ESM8-T-x1



ECM-x1

## TECHNICAL DATA

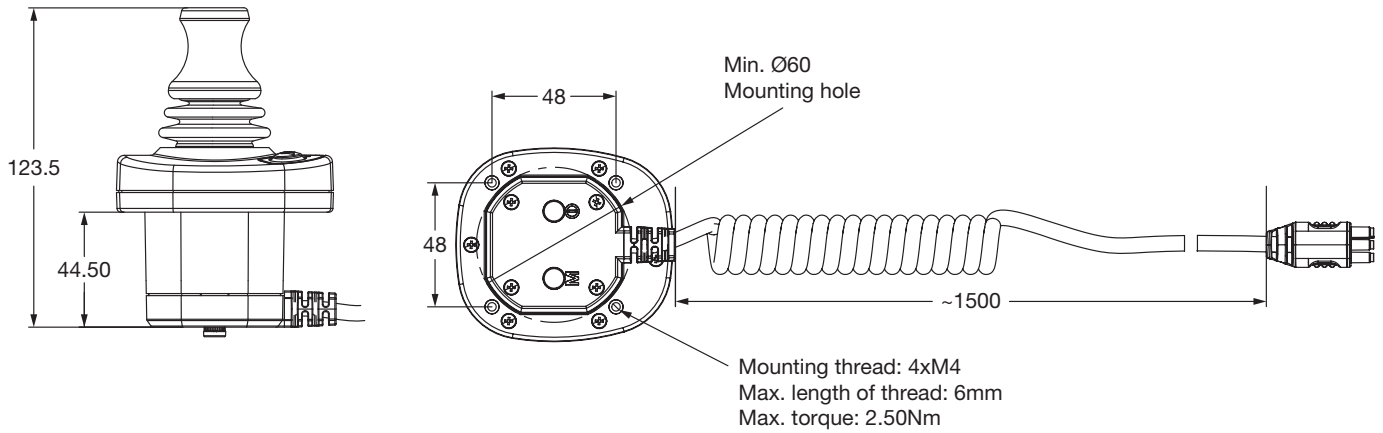
Feature Offering	AC-x1	ESM8-F-x1	ESM8-T-x1	ECM-x1
Part Number	17975700-2101	17966700-4001	17966700-4101	17956700-0201
LED Display	Yes	Yes	Yes	No
Jack Sockets	2 x Mono Sockets	No	No	No
Actuator Control	Yes (5+)	Yes (5+ Via Mapped I/O)	Yes (5+ Via Mapped IO)	No
Lighting Control	No	Yes (5+ Via Mapped I/O)	Yes (5+ Via Mapped I/O)	No
Assignable Keypad Functions	No	Yes (Up to 48 key options)	Yes (up to 48 key options)	No
Joystick Control	Proportional	N/A	N/A	N/A
9 Pin D-Sub Connection	No	No	No	Yes – 10 Environmental control switch functions



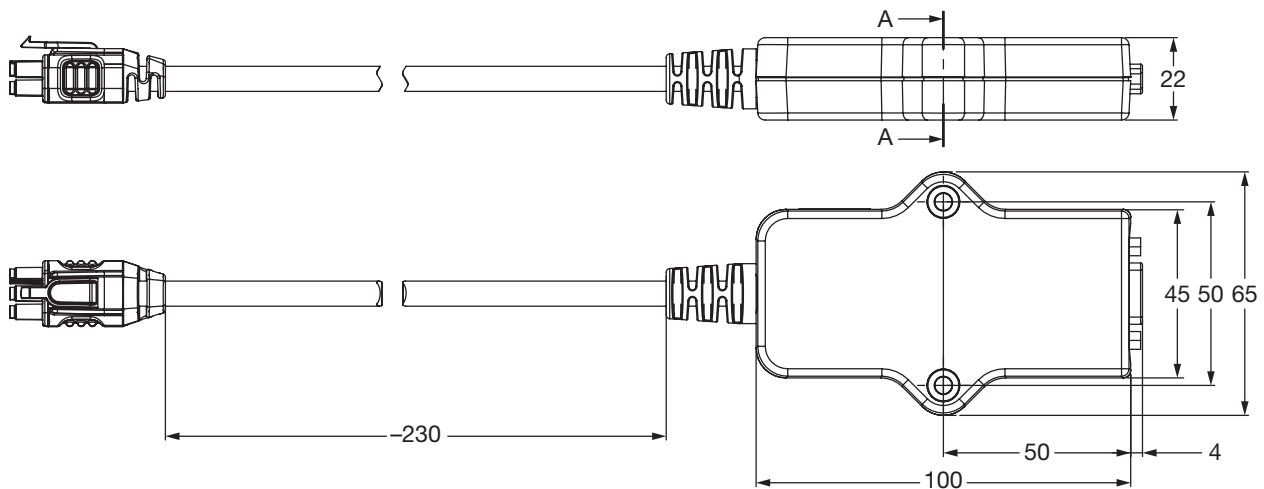


## DIMENSIONS mm

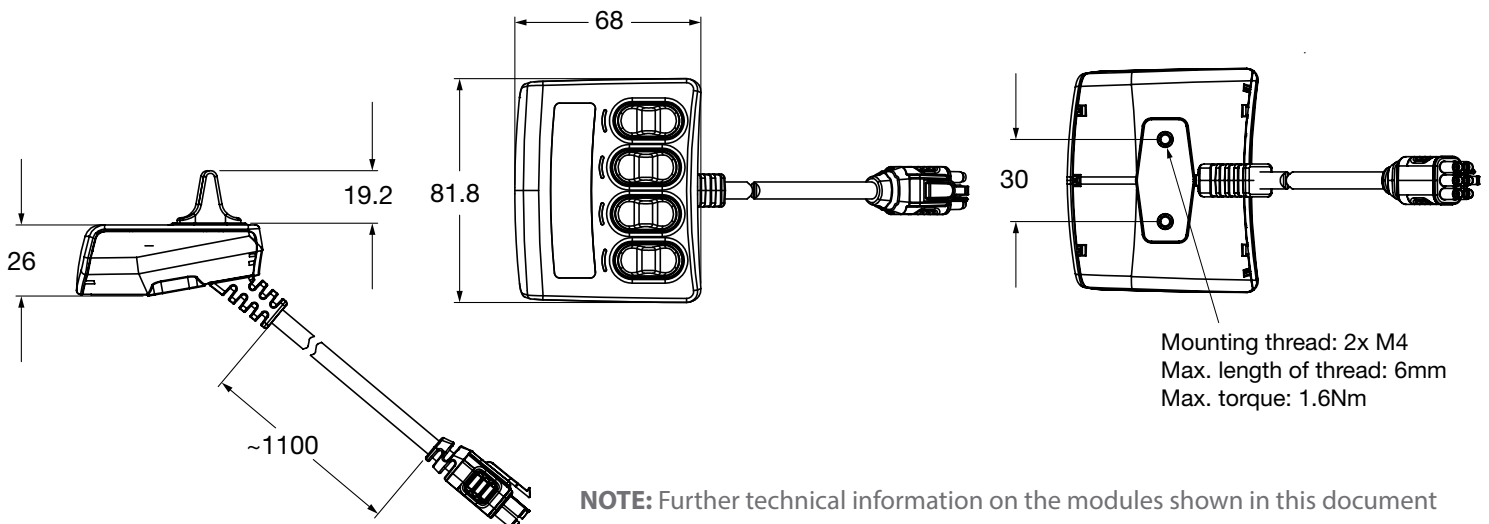
### Attendant Control



### Environmental Control Module (ECM)



### Enhanced Switch Module (ESM)

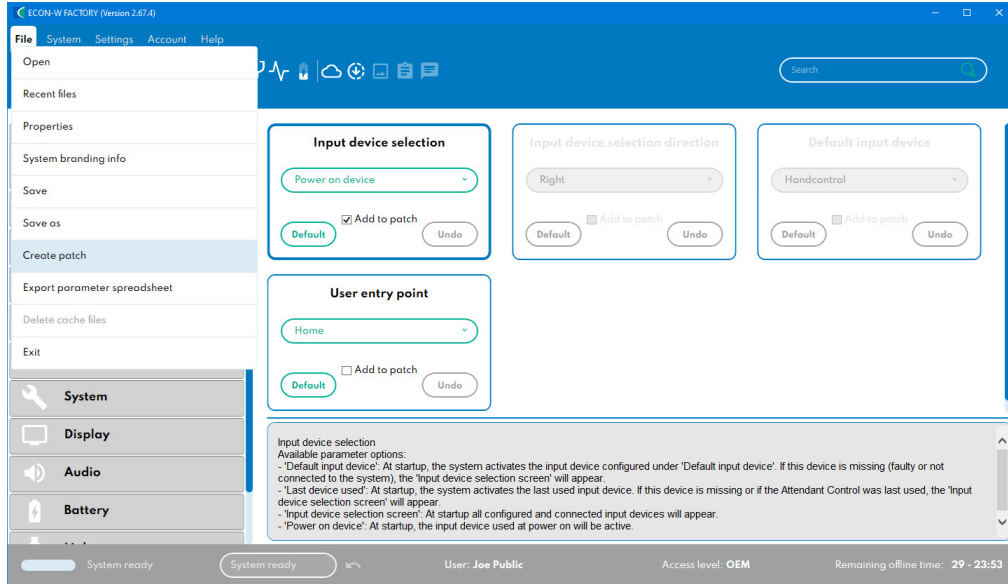


**NOTE:** Further technical information on the modules shown in this document can be found in the eX1 Technical Manual. A range of bus cables, bus multipliers and remote charging cables are also available.



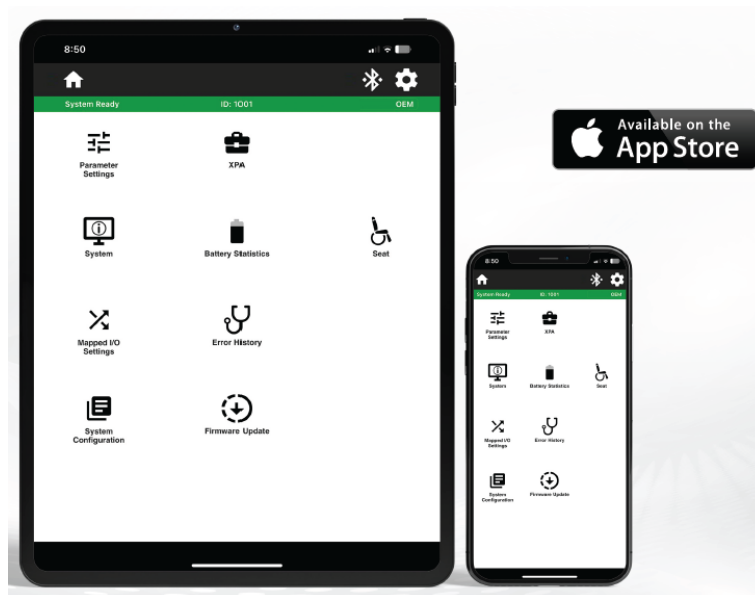
## PROGRAMMING TOOLS

The enAble x1 system is programmed using a Bluetooth dongle free connection to one of the Econ programming tools. The tools available are as follows:



**Econ-W** – A windows based version of the programmer which is also used as the main Service Centre based tool for Remote diagnostic and programming access.

**Econ-I** – An IOS based tool for Programming and diagnostics

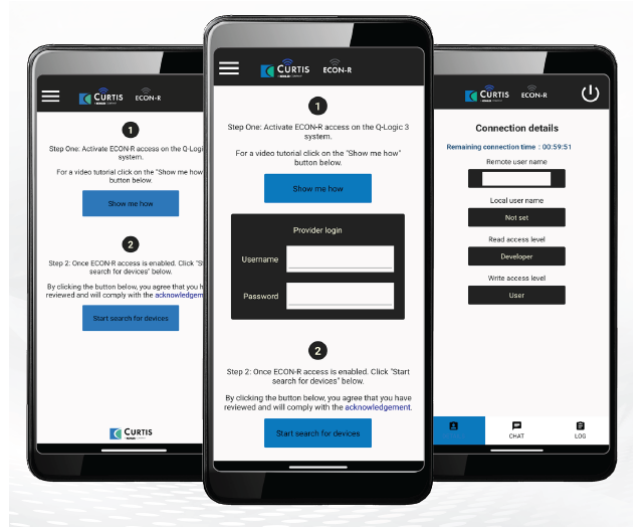




## PROGRAMMING CONT'D

**Econ-A** – An Android based tool for programming and diagnostics (coming soon)

**Econ-R** – An application for both IOS and Android devices that allows connection to the wheelchair and remote connection through to an Econ-W station



## STANDARDS

The enAble eX1 system is designed and manufactured according to all current power wheelchair standards. The following list details all relevant standards and approvals that the Curtis enAble X1 system complies with and supports OEM powerchair compatibility. Conformance of the powerchair using the Curtis enAble X1 system is the responsibility of the OEM.

- ▶ ISO7176 – Pt 9
- ▶ ISO7176 – Pt 14
- ▶ ISO7176 – Pt 21
- ▶ ISO7176 – Pt 25
- ▶ RESNA WC-2
- ▶ FCC – Bluetooth Approvals
- ▶ FDA – 510K Approval
- ▶ IEC62304
- ▶ EN12184
- ▶ TÜV SÜD - ISO 7176-14

**WARRANTY** Two year limited warranty from time of delivery.