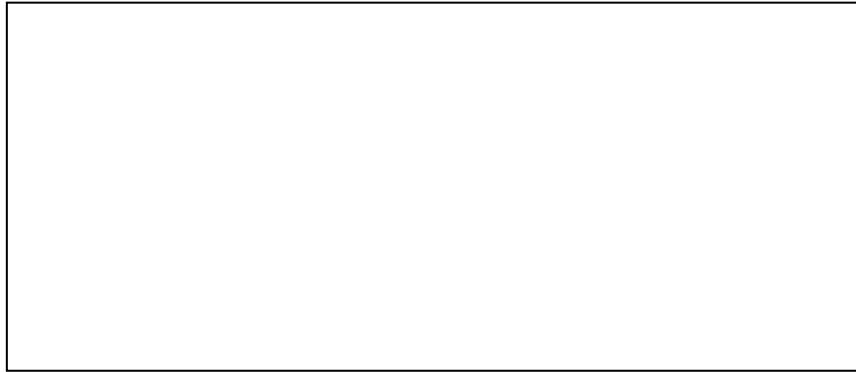


# DTAC-102 QUICK START

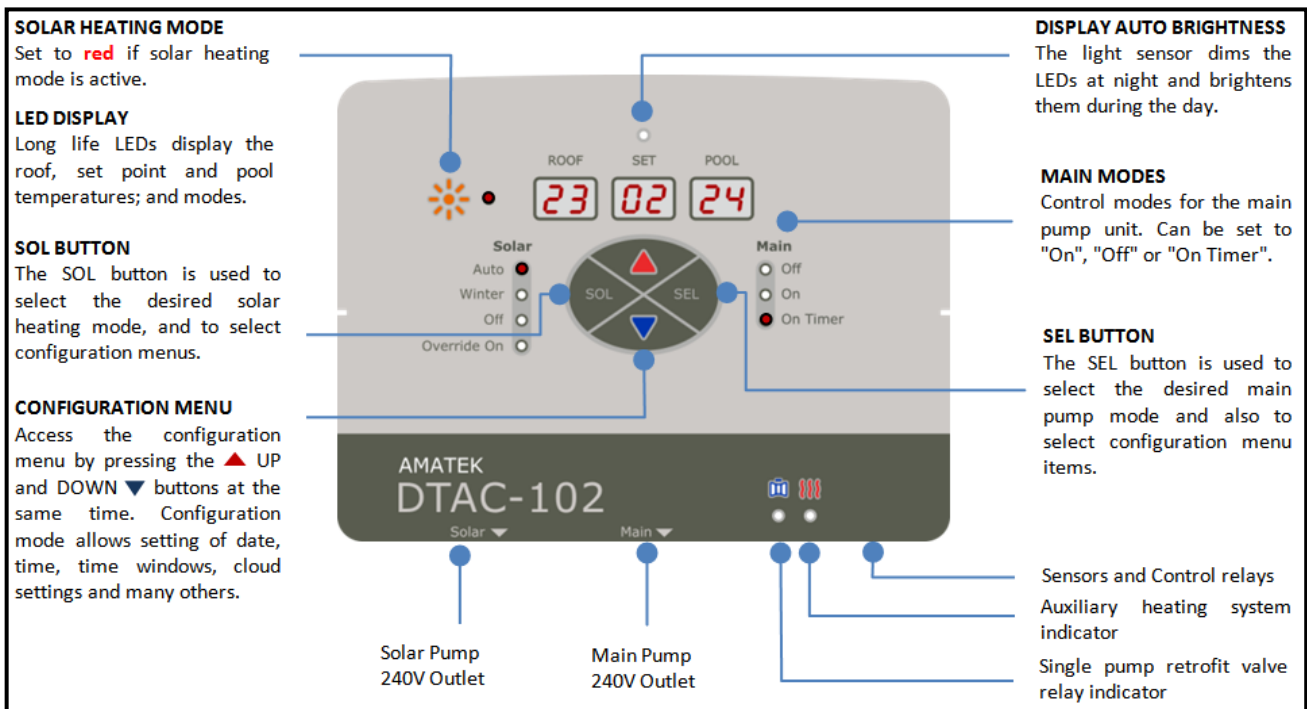
## UNIT UNIQUE ID (UUID)



## 1 OPERATION SUMMARY

The DTAC-102 is designed as a dual GPO, solar pool heating controller that can operate in standalone, single and dual pump retrofit modes, and with a sophisticated IoT capability integrated into current technology mobile devices.

### 1.1 Control panel



### 1.2 Operational Summary

#### Solar Auto

When solar gain is available the pool is heated to the set point temperature during two configurable time windows. Auto Cooling mode is also available, configured by the App.

#### Solar Winter

Runs the solar pump every day for 6 minutes to maintain pump operation. Saves energy and wear and tear on the pump during winter when the pool is not in use.

#### Solar Off

Disables the solar pump and heating algorithm, until the next timer "on time" occurs.

#### Override On

Runs the solar pump until the end of the current or start of the next time window, at which DTAC reverts to the previous Solar control state.

#### Main Off

Disables both pumps simultaneously, until the next timer "on time" occurs. Can facilitate multiport valve use while backwashing, rinsing or cleaning operations.

### Main On

Enables the main pump until the next timer "on time" or "off time" occurs and reverts the Solar pump to its previous state. It can be used for backwashing and rinsing operations.

### On Timer

Runs the main pump when the time is within one of the two configurable time windows.

### Anti Freeze Mode

Runs the pumps when the roof temperature falls to the freeze threshold (settable between 0C-6C) for 3 minutes and thereafter until the roof temperature rises above that or the mode is turned off.

## 2 INSTALLATION

Refer to the "DTAC 102 User Manual.pdf" for full details of the installation, App download and configuration, use and specifications of the DTAC-102 product.  
<https://www.amatek.com/dtac/>



### 2.1 Mounting

1. Mount the baseplate
2. Slide the DTAC over the baseplate

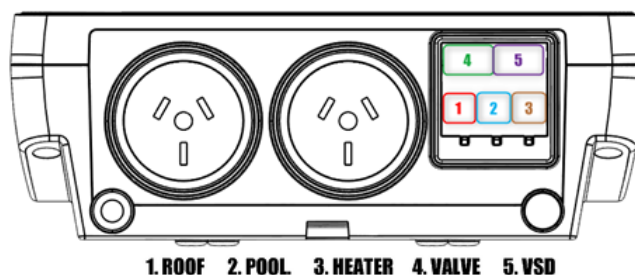
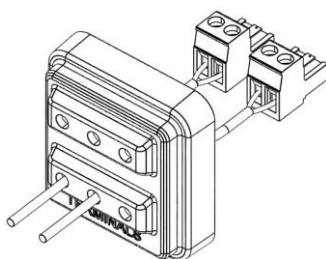
### 2.2 Connecting cables and pumps

The DTAC-102 uses Phoenix plugs and sockets to allow the following wired connections:

- Wired roof and pool sensors
- Heater interlock for hybrid system. Allows dry contact relay control of an external heater
- Valve actuator - Allows single pump retrofit mode to redirect water to the roof
- Variable Speed Drive control (future option)

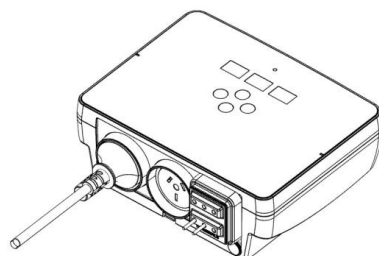
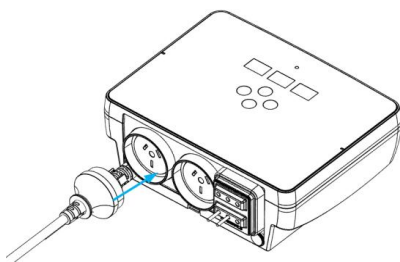
#### 2.2.1 Sensing and Control

The silicone rubber terminal socket seal protects the cables and plugs from moisture and insects. **Note:** Ensure the socket seal is installed correctly during installation and for the product lifetime. To install the seal, drill the required holes in it so the sensor and control cables can pass through. Then disconnect the Phoenix plugs from the sensors, feed the cables through the holes, and then reconnect them. Install the cables as the diagrams below using the silicone rubber terminal cover. If necessary use silicon glue to seal the holes.



#### 2.2.2 Stand alone installation

Connect the solar pump plug to the solar pump socket.



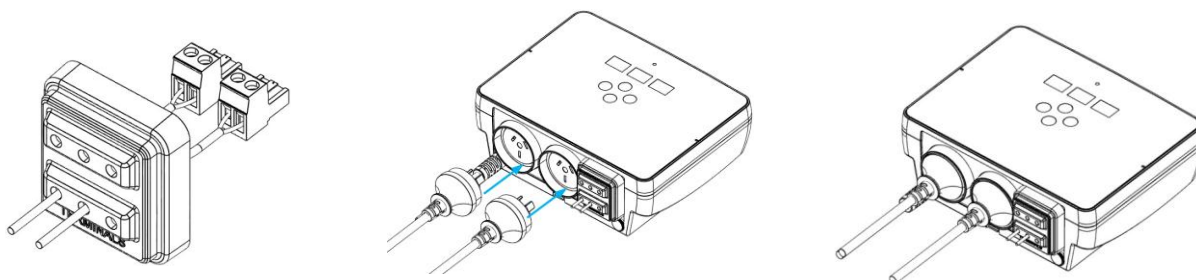
### 2.2.3 Single pump retrofit installation

Connect the Phoenix connector to the Valve actuator port. Connect the solar pump plug to the solar pump socket.



### 2.2.4 Dual pump retrofit installation

Connect the solar pump plug to the solar pump socket and the main / filtration pump to the main pump socket.

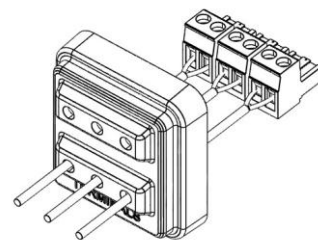


### 2.2.5 Heater Interlock Connection

The DTAC-102H model can control an external heater with a dry contact closure.

### 2.2.6 Phoenix Connector Pinout

The Phoenix connector pinout is detailed in the schematic.



#### 1. Roof sensors

- 1.1. DTAC Unpolarised
- 1.2. DONTEK Ground/Shield to -ve terminal
- 1.3. ASCON Ground/Shield to -ve terminal

#### 2. Pool sensors

- 2.1. DTAC Unpolarised
- 2.2. DONTEK Ground/Shield to -ve terminal
- 2.3. ASCON Ground/Shield to -ve terminal

#### 3. Heater Interlock

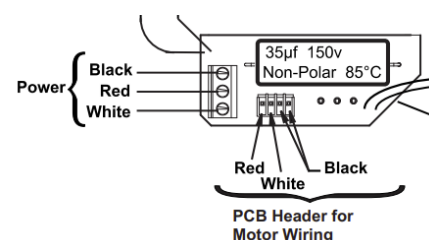
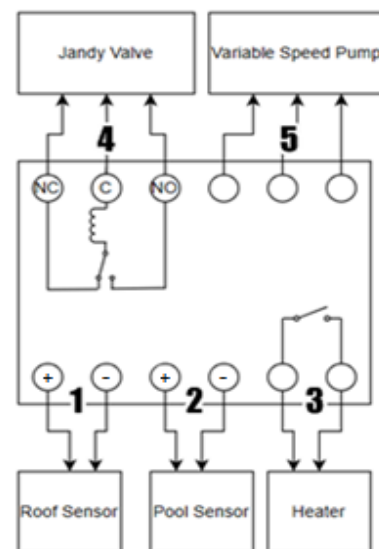
The heater interlock is a dry contact relay closure and not polarised.

#### 4. Valve actuator

Connect the red Jandy wire to common, black to NC, and white to NO. If the valve turns the wrong way when first connected then swap the black and white wires in the Phoenix connector.

#### 5. Variable Speed Pump (VSD) - Future option

Do not use.



### 3 MOBILE DEVICE APP

A mobile App is available for the DTAC on Android (version 7 and above) devices and iOS (version 15.5 and above) devices.

#### 3.1 App download

Scan the QR code on the unit or box sticker where it is written "Scan to get started." Or go to "[www.amatek.com/dtac](http://www.amatek.com/dtac)"

Follow the instructions in the "DTAC 102 User Manual.pdf" document to install and configure the App.



### 4 FRONT PANEL OPERATION

The DTAC products can be operated from both the front panel and from a mobile App.

The three LED displays show the ROOF, SET and POOL temperatures. SET displays the desired temperature when heating.

There are four "buttons" on the front panel, UP, DOWN, SOL and SEL. In normal use the SEL button controls the main pump and mode, and the SOL button controls the solar pump and mode.

#### 4.1 Main Control

Pressing the SEL button toggles between the "On" and "Off" modes. "On" or "Off" mode will continue until the end of the current or the beginning of the next time window and then revert to OnTimer.

Pressing and holding the SEL button enables "On Timer" mode.

#### 4.2 Solar Control

Pressing the SOL button will cycle the Solar control through "Auto", "Winter" and "Off" modes.

Pressing and holding the SOL button enables "Override On" mode. "Override On" will continue until the end of the current or next time window.

When the solar control not "Off", the UP and DOWN buttons increase or decrease the temperature set point.

#### 4.3 Configuration Menus

Configuration menus may be entered and exited by holding UP and DOWN at the same time.

Pressing the SOL button moves to the next menu item. Pressing the SEL button enters the current menu item and pressing the press SOL button then exits that menu item. If no buttons are pressed after one minute the configuration menus are exited.

##### 4.3.1 Cloud/Wi-Fi Setup

The cloud menu allows Wi-Fi access to the AWS cloud server which supports the DTAC mobile App. To access to the Cloud menu from the operational panel, press and hold the "UP" and "DOWN" buttons together. Ensure the Bluetooth is enabled on the mobile device being used for activation.

- When "Cloud" is displayed, press SEL to enter the menu
- The current cloud status will be shown as either "On" or "OFF"
- Then press UP/DOWN to change the Cloud status, and as the Cloud status cycles the indicator will blink
- If you have changed your WiFi, turn OFF, wait 5 seconds and turn ON again
- Press SEL to enable the cloud / Wi-Fi connection
- While DTAC is setting up connection with the Cloud "Connecting" with dots animation will then be displayed
- Use the mobile App to enter the Wi-Fi passcode and wait for a few seconds

- If the Cloud is successfully connected, the display will show "5U CC E5"
- After showing the Cloud connection result, the software exits the Cloud menu
- To exit the configuration menu hold UP and DOWN or press SOL

#### **4.3.2 Set Time**

- When "tt" is displayed, press the SEL button to enter the time menu
- The time will then be displayed in HH:MM:SS format and the selected digit will blink
- Press UP or DOWN to modify the blinking digit
- Press SEL to go to the next digit
- After all the 6 digits are configured, press SEL to save the newly set time and exit or SOL to exit without saving

#### **4.3.3 Set Date**

- When "dA tE" is displayed, press SEL to enter the date menu
- The system date will be displayed in YY:MM:DD format and the selected digit will blink
- Press UP or DOWN to modify the blinking digit
- Press SEL to go to the next digit
- After all the 6 digits are configured, press SEL to save the newly set date and exit or SOL to exit without saving

#### **4.3.4 Time Window 1**

Time Window 1 allows user to set the first time window for the pumps to turn ON and OFF

- When "t1" is displayed, press SEL to enter the menu
- The start time will be displayed in HH:MM format, and the selected digit will blink
- Press UP or DOWN to modify the digit
- Press SEL to go to the next digit
- Continue to press SEL until E1 and end time is displayed in the HH:MM format
- Repeat the above steps to configure the end time
- After the last digit is configured, press SEL to save and exit the "Time Window 1" setting or SOL to exit without saving

#### **4.3.5 Time Window 2**

Time Window 2 allows user to set second time window for the pumps to turn ON & OFF

- When "t2" is displayed, press SEL to enter the menu
- Follow the same procedure as listed above for Time Window 1

#### **4.3.6 Time Window Note**

Note: Setting both time windows to 00:00 and 00:00 shall effectively turn off the controller.

#### **4.3.7 Temperature Sensor Selection**

The temperature sensor menu allows one of three sensor types to be selected:

- 0 for a DTAC sensor
- 1 for a Dontek analogue sensor
- 2 for an Ascon sensor
- 3 for a DTAC wireless sensor (Reserved for a future release so do not select)

Pool and roof sensor types can not be individually selected, but are selected in pairs

- When "t5 En 5r" is displayed, press SEL to enter the menu
- Press UP or DOWN to choose the sensor type
- Press SEL to confirm, exit and save the selected sensor type or SOL to exit without saving

#### **4.3.8 Roof Sensor Position**

The roof sensor may be configured in one of two modes, with the DTAC start up default being Roof:

- Up / Down (ud on the display)

- Roof (rooF on the display)

When in Up / Down mode there is a pump priming period applied. When in roof mode, no priming period is applied for sensing roof temperatures.

- When "rF 5E t " is displayed, press SEL to enter the menu
- Press the UP/DOWN button to change to roof mode and "rooF" will start blinking
- Press the UP/DOWN button again to change to Up/Down mode and "ud" will start blinking
- Press SEL to save the selection and exit or press SOL to exit without saving

#### 4.3.9 Plumbing Configuration

There are three plumbing configurations:

- 0 for standalone (default)
- 1 for single pump retrofit
- 2 for dual pump retrofit

- When "P1 Ct r1" is displayed, press SEL to enter the menu.
- Press UP / DOWN to change the plumbing configuration type.
- Press SEL to save the configuration and exit or press SOL to exit without saving

#### 4.3.10 Priming Time

- When "Pri tt" is displayed, press SEL to enter the menu and the selected digits will blink
- Press UP or DOWN to modify those digits, and press SEL for the next digits
- Press SEL to save the configuration and exit or press SOL to exit without saving

#### 4.3.11 Enable / Disable Heater

- When "HE At Er" is displayed, press SEL to enter the menu
- The default heater state is "Off"
- Press UP / DOWN to change the heater state to "On" the text, "On" will start blinking if selected
- Press SEL to save the heater state and exit or press SOL to exit without saving

#### 4.3.12 Hysteresis

The hysteresis menu allows the selection of the differential, being the temperature difference limit that must be measured before the system changes state to heat or stop heating. The larger the difference, the less "hunting" the system will do to maintain temperature.

- When "HY 5t Er" is displayed, press SEL to enter the menu
- The hysteresis values range from 1C to 9C. The default value is 1C
- Press UP / DOWN to change the hysteresis value
- Press SEL to save the hysteresis value and exit or press SOL to exit without saving

#### 4.3.13 Solar Gain

Solar heating gain is the difference between the measured roof and pool temperatures. When the solar heating gain is equal to or greater than the solar gain setting, the solar pump will operate. Solar gain can be set from 1C to 20C. The default solar heating gain is 1C.

- When "50 LA rG " is displayed, press SEL to enter the menu
- Press SEL to go into the solar gain menu and the solar heating gain will be displayed
- Press UP / DOWN to change the value
- Press SEL to save the solar gain value and exit or press SOL to exit without saving

#### 4.3.14 Freeze Control

If a system measures a roof temperature below the freeze control threshold, then it will run the solar pump for 3 minutes, and then wait another 30 minutes to check again. This will continue until the roof temperature rises above the freeze control threshold.

**Note Well:** Freeze Control will only operate when the Solar mode is set to Auto or Winter. If the Solar mode is off, then freeze control will not operate.

- When "Fr Ct r1" is displayed, press SEL to enter the menu
- The default freezing control state is "Off"
- Press UP or DOWN to change the freezing control state to "On" or "Off"
- The text "On" or "0 FF" will start blinking if selected
- Press SEL to save the freezing control state and exit or press SOL to exit without saving

#### 4.3.15 FreezeThreshold

- When "Fr th rE" is displayed, press SEL to enter the menu
- The default freezing threshold is 6 degree Celcius
- The freezing threshold range is from 1 degree to 6 degree
- Press UP/DOWN to change the value
- Press SEL to save the freeze threshold and exit or press SOL to exit without saving

## 5 DTAC-102 Backwash procedure

Note that backwashing the pool with a retrofit system requires the solar pump to be turned off during the backwash as the system does not know the position of the filter's multiport valve, and if the solar gain is sufficient, then the solar pump will run with no water input, or the valve will move to the heating position. To backwash a retrofit system do the following:

1. Turn the Solar to Off
2. Turn the Main to Off
3. Rotate the multiport valve to backwash
4. Turn the Main to On
5. When you have finished backwashing, turn the Main to Off
6. Rotate the multiport valve to rinse (Optional)
7. Turn the Main to On (Optional)
8. Rinsed turn the Main to Off (Optional)
9. Rotate the multiport valve to filter
10. Turn the Main to On
11. Turn the Solar back to Auto

## 6 UNIT SPECIFICATIONS

### 6.1 Approvals and Ratings

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Approval Certificate  | NSW29186                                          |
| Input                 | 230VAC, 50Hz, 10A, 2.3kW                          |
| Max Total Output Load | 9.9A 2.28kW                                       |
| Insulation            | Double insulated water circuit                    |
| IP rating             | IP33 (Keep out of direct sun, rain and pool zone) |
| Temperature           | 0C - 40C                                          |
| Altitude              | 3,000m                                            |

### 6.2 Sensor Compatibility List

|                                                                                |
|--------------------------------------------------------------------------------|
| <b>ASCON</b>                                                                   |
| MS3D Roof Sensor for Pool Pool / Spa Heating Controller                        |
| MS3D Pool / Cold Sensor for Pool / Spa Heating Controller                      |
| <b>Dontek (M denotes meters)</b>                                               |
| TS02P (2.5M) [2.5M Shielded Cable - "Plus" Series suit AS5 AS2+ AS3+]          |
| TS01P (20M) [Heavy Duty Poly Propylene - "Plus" Series suit AS5 AS2+ AS3+]     |
| TS01SP (20M) [Shielded Cable - "Plus" Series suit AS5 AS2+ AS3+]               |
| TS08P (50M) [50M Heavy Duty Poly Propylene - "Plus" Series suit AS5 AS2+ AS3+] |
| TS23P (100M) [Heavy Duty Poly Propylene - "Plus" Series suit AS5 AS2+ AS3+]    |

## 7 WARNING:

The DTAC product line is rated to supply a maximum combined power of 2.3kW under Approval Certificate NSW29186. If the product is connected to equipment with a load greater than 2.3kW then the DTAC may be damaged.

The DTAC product must NOT be installed where sustained overload can occur and it is not warranted under such usage. For a load greater than 2.3kW then an AMATEK PS001A power separator must be used, which can take an additional 2.4kW load, or 4.7kW in total.

See the "DTAC 102 User Manual.pdf" for a system load calculator. It is recommended to install the product under cover, not in direct sunlight, and in accordance with AS/NZS 3000 and AS/NZS 3136.

## 8 WARRANTY AND LIABILITY

### 8.1 Warranty on Hardware

- (1) Subject to the following clause (1) **SUPPLIER** warrants that the goods delivered by **SUPPLIER** shall be free from defects in material and workmanship.
- (2) **SUPPLIER** shall be released from obligations in the event that the goods are subject to misuse, neglect, accident, improper installation or any unusual or unrecommended physical, environmental or electrical stress (including improper voltage or power surge) by **BUYER** or if repairs or modifications are made by persons other than **SUPPLIER's** own or authorised service personnel (unless such repairs by others are made within the consent of **SUPPLIER** which consent will not be unreasonably withheld in the case where such persons are reputable and adequately and properly trained).
- (3) Limited three year warranty, first year full warranty, second and third year back to base warranty.
- (4) Amatek Design reserves the right to investigate, determine the cause of failure and replace or refund at its sole discretion.

### 8.2 Limited Software Warranty

- (1) **SUPPLIER** does not warrant that software or firmware supplied under this Agreement:
  - (a) will operate error free;
  - (b) will operate uninterrupted while in use;
  - (c) will meet the customers requirements other than those set out in specifications accepted by **SUPPLIER**; or;
  - (d) will provide any function not designated in such specifications.
- (2) **SUPPLIER** agrees to use its best endeavours to rectify or replace the software or firmware at its option and at its own expense when such defect has been detected by Buyer and notified to **SUPPLIER** in writing within 90 days of the software or firmware satisfactorily completing the relevant tests specified or prescribed by Buyer, provided the details of such tests have been advised by Buyer to **SUPPLIER** prior to delivery of the software to Buyer.
- (3) If testing of delivered software has not occurred within 30 days of the date of delivery the software is deemed to be accepted by Buyer.
- (4) If investigation of a problem reported vide clause (2) establishes that the cause of the report is not **SUPPLIER** software, **BUYER** agrees to pay on Invoice the charges for the effort expended by **SUPPLIER** in researching the reported problem.
- (5) Subject to clauses (1) and (2) **BUYER** acknowledges that the goods including related software and firmware provided to **BUYER's** specification are of a design capacity, manufacture and performance as selected by **BUYER**.
- (6) All conditions, warranties and representations on the part of **SUPPLIER** in relation to the goods or the software, whether expressed or implied, statutory or otherwise, whether collateral or antecedent hereto including but not limited to any warranty or condition of fitness for a particular purposes are hereby expressly excluded, provided that nothing herein contained purports to exclude, restrict or modify the operation or effect of any terms compulsory implied in this Agreement by virtue of any legislation.
- (7) Subject to clause (6) **SUPPLIER** shall not be liable to any person for any special, general or consequential damages, including but not limited to loss or profits from any cause whatsoever arising out of or in any way connected with **SUPPLIER's** obligations under this Agreement
- (8) **SUPPLIER's** liability under this Agreement shall be limited, at the option of **SUPPLIER** where goods or software are supplied to the replacement cost of the goods or software, the repair for the goods or software, or payment of the replacement cost of the goods or software.
- (9) **SUPPLIER** further warrants that this Agreement does not in any way infringe upon any registered trademark, trade name or patent or upon the right entitlement or interest of any firm, person or corporation not a party to this Agreement pursuant to the Copyright Act or otherwise.

|              |               |                                  |
|--------------|---------------|----------------------------------|
| PREPARED: PS | DATE: 5/11/23 | PROJECT: DTAC-102                |
| APPROVED: SB | DATE: 15/5/24 | DOC NUMBER: A100J101F080D011R004 |
| STATUS       | RELEASE       |                                  |

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**AMATEK DESIGN** ABN 15 100 790 109  
501/781 Pacific Highway Chatswood 2067  
Email: dtacsupport@amatek.com  
Sales: sales@amatek.com  
www.amatek.com