



**Astral™** series



## Disconnection Alarm Guide

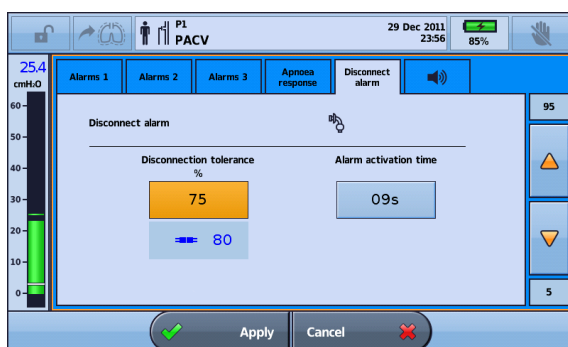
English

# Astral Disconnection Alarm

The Astral Disconnection Alarm constantly measures circuit resistance to calculate the degree of disconnection (displayed as a percentage). The high priority Disconnection Alarm will activate when the measured disconnection value is greater than the set tolerance for the alarm Activation Time.

The alarm will only activate if the measured disconnection value is continuously above the Disconnection Tolerance for the alarm Activation Time. If the monitored value drops below the set Disconnection Tolerance during this time, the time to alarm activation will reset.

The alarm will not activate if patient expiratory effort is detected, indicated by the symbol below the measured Disconnection value.



Any active alarm will clear when the monitored value drops below the set Disconnection Tolerance.

## Adjusting the Disconnection Alarm

There are three settings that can be adjusted to the Disconnection Alarm to suit patient needs:

1. Disconnection Tolerance – to set a higher or lower tolerance to activate the Disconnection Alarm
2. Alarm Activation Time – the time it takes (in seconds) following disconnection for the alarm to activate
3. Disconnection Alarm On/ Off (selected interfaces only).

## CAUTION

---

Be certain that patient disconnection can be detected, including if the patient interface becomes accidentally detached from the patient (eg, if the tracheostomy tube / endotracheal tube / mask / mouthpiece remains attached to the circuit). For example, to check that accidental decannulation of a tracheostomised patient can be detected, simulate disconnection using a tracheostomy tube one size smaller than the patient's tube.

---

## Setting and testing Disconnection Tolerance

The Disconnection Tolerance threshold represents how 'leaky' a circuit can be – or degree of 'disconnection' – before the Disconnection Alarm is asserted.

Disconnection Tolerance is adjustable from 5% (little 'disconnection' will be tolerated before alarm) through to 95% (large degree of 'disconnection' tolerated without alarm).

To assist with alarm adjustment, leakage from the circuit is continuously measured and displayed after each breath. The measured value is scaled to permit direct comparison against the Disconnection Tolerance adjustment range. A measured value greater than or equal to the configured Disconnection Tolerance will be displayed in red, along with an icon depicting a 'disconnected' circuit. If this level of leakage from the circuit were sustained for the Activation Time, the alarm would assert.

So if simulating disconnection, the measured disconnection should consistently exceed the disconnection tolerance (disconnected icon). By contrast, during ventilation of the patient, the measured disconnection percentage should be mostly below the configured disconnection tolerance.

Some interface types (vented mask and mouthpiece) will allow for the alarm to be turned off.

The default Disconnection Tolerance will change according to the Pediatric/Adult setting and the Interface type selected. Interfaces offering a very high resistance (eg, small diameter tracheal tubes) may require a Lower Disconnection Tolerance setting than the default value.

## To access the Disconnection Alarm:

1. Access Clinical mode. The Settings screen is displayed.



2. Select . The Alarms screen is displayed.
3. Select the **Disconnection Alarm** tab.



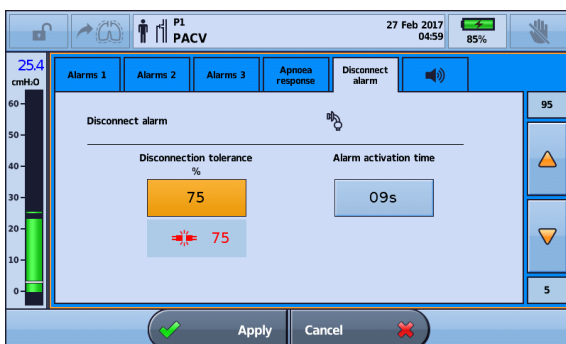
**Note:** The Disconnection Alarm default setting is ON.

## To set the Disconnection Tolerance:

These steps should be performed prior to starting ventilation on the patient.

1. Attach all components of the patient circuit, including interface (a test cannula should be used in the case of a tracheostomy).
2. Start ventilation at the appropriate therapy settings, circuit configuration, and supplemental oxygen (if required).
3. If necessary, adjust the Disconnection Tolerance value until it is exceeded by the measured disconnection value which will turn red.

**Note:** The Disconnection Tolerance value should not be set above the measured disconnection value otherwise disconnection or de-cannulation will not be detected.



4. Connect patient to the ventilator and allow breathing to stabilise.
5. Check that the measured disconnection value is below the Disconnection Tolerance value.
6. Adjust the Disconnection Tolerance value based on patient dependency.
7. Press **Apply** to confirm settings.

**Note:** Setting the Disconnection tolerance too low may result in annoyance alarms and may render the alarm ineffective.

### To test the Disconnection Tolerance:

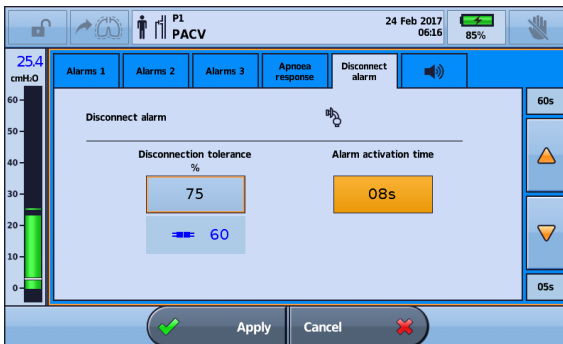
1. Ensure the patient is being ventilated with the appropriate therapy settings, circuit configuration, patient interface and supplemental oxygen (if required).
2. Simulate disconnections to ensure the disconnection value exceeds the Disconnection Tolerance setting. The value and icon will turn red.

## Setting Activation Time

The Disconnection Alarm will only activate if the measured disconnection value is continuously greater than or equal to the Disconnection Tolerance for the alarm activation time. If the monitored value drops below the set Disconnection Tolerance during this time, the time to alarm activation will reset.

### To set alarm Activation Time:

1. Press Activation Time.
2. Increase or decrease the time based on patient dependency and to take into account activities such as speaking.



3. Press Apply to confirm your changes.

# Disabling (or enabling) the Disconnection Alarm

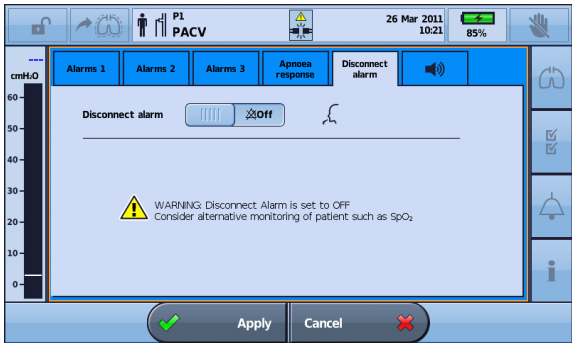
The Disconnection Alarm default setting is ON. To disable the Disconnection Alarm, the patient interface setting must be set to:

- Mouthpiece (for valved circuits), or
- Mask or Mouthpiece (for leak circuits).

Interface	Disconnection alarm activation time (default)	Disconnection alarm OFF
Invasive	Adult: 5-60 sec (9)	No
	Paed: 5-30 sec (8)	No
Mask	Adult: 5-60 sec (15)	No (valve) / Yes (leak)
	Paed: 5-30 sec (13)	No (valve) / Yes (leak)
Mouthpiece	Adult: 5-900 sec (15)	Yes
	Paed: 5-30 sec (13)	Yes

## To disable or enable the Disconnection Alarm function:

1. Select the Disconnect Alarm tab.
2. Press the slider to turn ON/OFF. A warning message will be displayed. The slider will not be shown for invasive interfaces or mask with valve circuits.
3. Select Apply from the bottom bar to proceed. An alert message will be displayed.



- Press Confirm on the bottom bar to continue.



- Once confirmed, the Disconnect Alarm is disabled and the Disconnect Alarm OFF icon will be displayed next to Standby on the Information bar.



## To test the Disconnection Alarm:

These steps should be performed prior to connecting patient to the ventilator.

- Attach all components of the patient circuit, including interface (a test cannula should be used in the case of a tracheostomy).
- Start ventilation at the appropriate therapy settings, circuit configuration, and supplemental oxygen (if required).
- Check that the measured disconnection value turns red and that the Disconnection Alarm activates after the Alarm activation time.

For full details on setting up and using Astral, read the Astral Clinical Guide.

**ResMed Ltd**

ResMed Ltd 1 Elizabeth Macarthur Drive  
Bella Vista NSW 2153 Australia

**Distributed By:**

ResMed Corp 9001 Spectrum Center Boulevard San Diego CA 92123 USA  
**[EC REP]** ResMed (UK) Ltd 96 Jubilee Ave Milton Park Abingdon Oxfordshire OX14 4RW UK

See [ResMed.com](http://ResMed.com) for other ResMed locations worldwide. Astral is a trademark and/or registered trademark of the ResMed family of companies. For patent and other intellectual property information, see [www.resmed.com/ip](http://www.resmed.com/ip).

© 2017 ResMed Ltd. 278472/4 2017-05



[ResMed.com](http://ResMed.com)