

[ Des-Case | IsoLogic ]

# VentGuard™ Breather with IsoLogic™ Technology

Product Manual & Installation Instructions



**DES-CASE**



Dear Valued Customer,

Thank you for choosing Des-Case and for placing your trust in us for your reliability needs.

Since 1983, we've been pioneering solutions specific to your applications that help maintain lubricant quality and maximize equipment reliability.

We appreciate the opportunity to provide you with high-quality products and excellent customer service. If you have any questions, please call our Technical Services Department at 615.672.8800.

Sincerely,



Brian Gleason  
President & CEO

Des-Case Corporation  
675 N. Main St.  
Goodlettsville, TN 37072  
(615) 672-8800 • Fax (615) 672-0701  
[www.descase.com](http://www.descase.com)

**An imperative link in the reliability chain,  
Des-Case helps you effectively control  
contamination before it controls you.**

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## Limited Warranty

Des-Case Corporation warrants its products to be free from defects in material or workmanship under normal use and service for one year from the shipping date, with Des-Case's obligations under this warranty being limited to repairing and/or replacing the purchased unit.

Des-Case Corporation reserves the right to examine all parts and records that are subject to warranty claim.

This warranty shall not apply to any product assembly or component that has been subject to misuse, negligence or accident, or that has been altered or repaired outside of the directives of Des-Case Corporation and/or established safety practices. This includes components not certified by Des-Case Corporation and/or installed later by the buyer/owner. Installing uncertified components nullifies this warranty and the purchaser assumes all responsibility as to rating and/or performance.

This warranty is made expressly in lieu of tort liability and any other warranties or conditions, expressed or implied, including any implied warranty or condition of merchantability or fitness for a particular purpose and any other obligations or liability on the part of the manufacturer without limitations of the foregoing consequential and incidental damages.

To obtain warranty service, contact Des-Case Corporation at 615.672.8800.

## Important Information & Notices from Des-Case

**For your safety, read this manual before using your system.**

Although this product is designed to be safe, it is highly recommended that you read this owner's manual and all labels on the equipment before operation. The instructions, safety warnings, and restrictions listed throughout this manual and on the equipment, are important for your safety, and must be followed during operation and maintenance of this system. By operating this product, you are deemed to have read, understood, and agreed to the instructions, terms, and conditions relating to the product.

This product has been examined and tested for safety; however, it must be understood that this does not guarantee absolute and permanent safety of this equipment. This unit is designed and manufactured to today's highest safety standards. Users are requested not to overestimate safety arrangements that may deteriorate with use, and users are requested to pay full attention to safety requirements of these units.

### **Unpacking Your System**

This product was delivered with maximum protection during transportation and handling. Please inspect the product upon delivery. In the event that there is a defect with the product, advise Des-Case before use.

**NOTE:** All damage attributed to handling and delivery of the unit must be recorded and brought to the attention of the shipping company immediately.

## Safety Warnings

- Follow the owner's manual to ensure proper use of this equipment.
- All wiring, electrical connections and system grounding must comply with the National Electric Code (NEC) and with any applicable local codes and ordinances.
- Do not operate this equipment with damaged electrical cords or connections. Always have a qualified electrician replace damaged electrical wiring. Electric shock or fire can result from wiring insulation damage.
- This equipment should be properly grounded to a suitable earth ground. Failure to properly ground this equipment can result in serious electric shock and possible explosion.
- Always disconnect the power supply before servicing.
- Always wear eye and hearing protection while operating this system. Also wear gloves, as the system and its components may be hot to the touch.
- Do not wear loose clothing while operating.



# Certifications

## FCC Registration

The FCC identifier for the radio module contained in the Des-Case IsoLogic™ is

**FCC ID: 2APBF-ISOLOGICBREA.**

The radio module in the Des-Case IsoLogic™ meets the requirements for modular transmitter approval as detailed in FCC public Notice DA00-1407.

Transmitter Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Des-Case may void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **RF Exposure**

To comply with FCC RF Exposure requirements, do not modify, remove or change the antenna on the radio module contained within the Des-Case IsoLogic™.

The radiated output power of the radio with mounted ceramic antenna (**FCC ID: 2APBF-ISOLOGICBREA**) is far below the FCC radio frequency exposure limits. Nevertheless, the radio shall be used in such a manner that the potential for human contact during normal operation is minimized.

## **Industry Canada Certification**

The radio module contained in the Des-Case IsoLogic™ is licensed to meet the regulatory requirements of Industry Canada (IC), license: 23729-ILBREA

## **IC Notice**

The radio module within the Des-Case IsoLogic™ complies with Canada RSS-GEN Rules. The device meets the requirements for modular transmitter approval as detailed in RSS-GEN.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

## **Avis IC**

Le module radio de l'IsoLogicMC de Des-Case est conforme aux règles RSS-GEN du Canada. L'appareil répond aux exigences d'approbation d'émetteur modulaire telles que détaillées dans RSS-GEN.

L'opération est soumise aux deux conditions suivantes:

1. Cet appareil ne peut pas causer d'interférences nuisibles, et
2. Cet appareil doit accepter toute interférence reçue, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.



## **Ingress Protection Rating**

Des-Case IsoLogic is rated IP66 as defined by the International Electronic Commission (IEC) and IEC 60529\*DEI.

An IP rating of IP66 certifies:

1. The product is dust tight, or allows no ingress of dust and provides complete protection against contact
2. The product is protected from powerful water jets, or water projected by a nozzle (12.5mm nozzle) against the enclosure from any direction shall have no harmful effects.

## Product Description

### **VentGuard™ Breathers**

Check-valves on the bottom of the unit isolate the system until equipment needs to breathe. As air is drawn into equipment through the breather, the layered filter elements remove particulate while the desiccant beads strip harmful moisture. While in service or during shutdown, the desiccant beads attract moisture from inside the equipment reservoir, actively drying the equipment.

- Removes moisture in the headspace of equipment
- Eliminates rust-forming condensation
- Prevents sludge deposits and water-contaminated oil
- Prevents contamination ingress
- Provides longer lubricant life
- Reduces wear and tear on equipment, prolongs life

### **Applications:**

- Intermittent Operations
- Gearboxes
- Low-Flow Applications
- High-Humidity
- Washdown

# Product Installation

## Breather Installation:

1. Install the desiccant breather where the standard dust cap or OEM breather cap is located on equipment.
2. Remove all plugs from bottom of breather and standpipe.
3. Secure breather by screwing onto asset.
4. Hand tighten only.

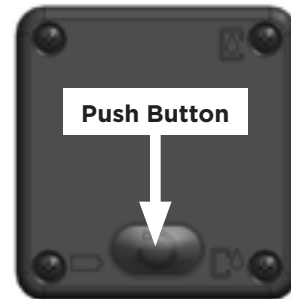
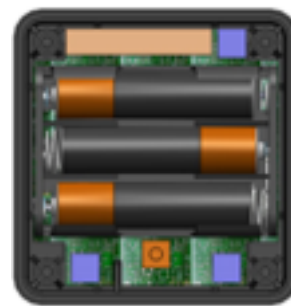
## Adapters:

Description	Part Number
1" FNPT x 1" Slip Fit Adapter	DC-10-S
1" Threaded Adapter	DC-10
1" Male Threaded x 1" Female Threaded Adapter	DC-10-T
Bell Reducer 1" to 3/4"-Slip Fit	DC-17
1"-3/4" Female to Male Threaded Adapter	DC-17-T
1"-1/4" Brass, Threaded Reducer/Adapter	DC-18
Threaded Flange Adapter	DC-12-T
Threaded Flange Adapter with Gasket	DC-12-TG
Bayonet Adapter	DC-15-T
3/4" NPT Vent Valve Adapter for VentGuard Breathers	DC-SDVA-12M
1" NPT Vent Valve Adapter for VentGuard Breathers	DC-SDVA-16M

## Product Installation

### Module Installation:

1. Install batteries in module by removing screws, inserting three AAA batteries and reinstalling the screws.
2. Push button on front of module to ensure indicator lights illuminate. If battery indicator light illuminates, the module is properly assembled. If lights do not illuminate, remove cover to check if batteries are installed in the correct direction and/or the module cover is installed in the correct position.
3. Align module with clips on side of breather
4. Pull down on module until secure



### App Installation and User Account:

1. Download the Des-Case app on your device.
2. Register for your Des-Case login by clicking "Sign Up."
3. Follow setup prompts on Des-Case app or web platform  
(See page 18 for step-by-step details.)



To download the latest App, search "Des-Case IsoLogic" in the Apple App Store.  
To access the App it is necessary to create an account using a valid email in the registration form at [descaseisologic.com](http://descaseisologic.com)

# Product Operation

## Materials & Components

- Filter Housing: Polycarbonate, nylon, polypropylene, Buna-N, silicone
- Filter Media: Polyurethane, polyester
- Hydrophilic Media: Silica gel
- Sensor Board: Lead-free and RoHS compliant

## Filter Efficiency

- (3μ absolute (β<sub>3</sub>≥200))

## Recommended Temperature Range

*Based on Duracell battery operating temperature range*

- -4°F to 130°F
- -20°C to 54°C

## Chemical Compatibility

- Recommended: All Gear Oils Most Hydraulic Fluids Mineral & Synthetic Oil
- Not Recommended:
  - Phosphate Ester
  - Hydrogen Sulfide
  - Sulfuric Acid
  - Highly Alkaline Cleaners

## Sizing Recommendations:

Model	Maximum Airflow at 1psid	Recommended Max. Volume Gearbox/ Storage Tank
DC-IL-VG-1-R	1.45cfm / 41lpm	35gal / 132L
DC-IL-VG-4-R	2.98cfm / 84lpm	500gal / 1893L

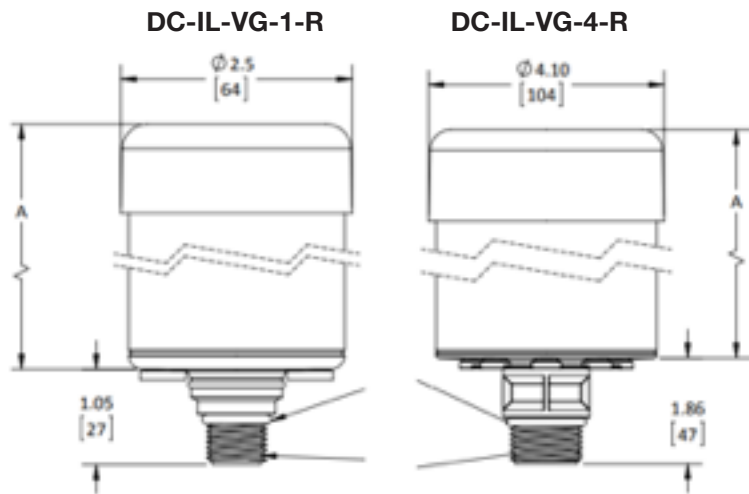
## Water Adsorption Capacity:

Model	Amount of Silica Gel	Maximum Water Retention
DC-IL-VG-1-R	0.28 lbs / 0.127 kg	49.7ml / 1.68fl. oz
DC-IL-VG-4-R	1.88 lbs / 0.85 kg	333ml / 11.3 fl. oz

## Dimensions & Connections (Breather Cartridge only):

Model	Connection	Unit Height	Unit Width
DC-IL-VG-1-R	3/8" Multi-Fit (NPT, BSPP, BSPT)	5.351 in / 13.5cm	2.5in / 6.4cm
DC-IL-VG-4-R	1" Multi-Fit (NPT, BSPP, NPSM)	10in / 25.7cm	4.1 in / 10.2cm

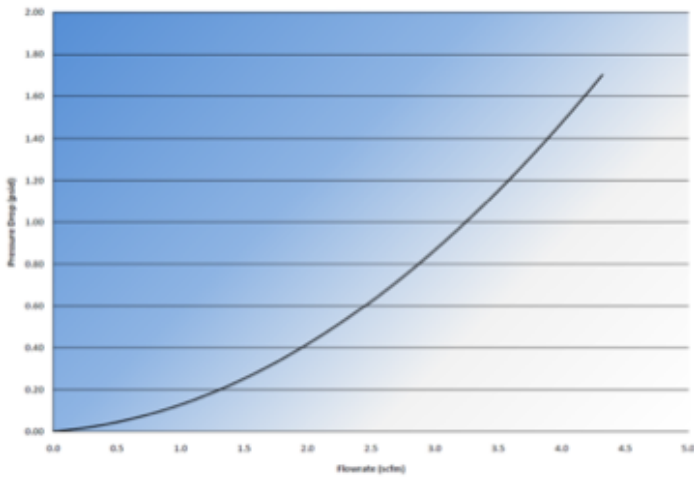
# Product Operation



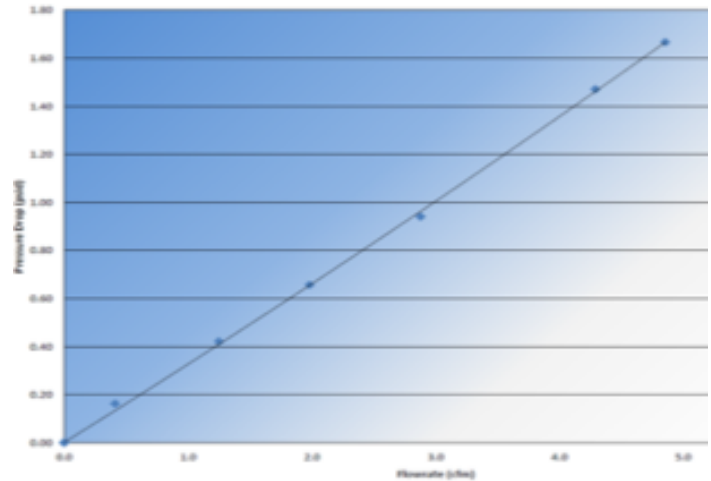
### Breather Height:

Model	A
DC-IL-VG-1-R	0.28 lbs / 0.127 kg
DC-IL-VG-4-R	1.88 lbs / 0.85 kg

DC-IL-VG-1 / DC-IL-VG-1-R Flowrate (cfm)



DC-IL-VG-4 / DC-IL-VG-4-R Flowrate (cfm)



Model	Max Flow Rate (cfm)	Max Flow Rate (lpm)
DC-IL-VG-1-R	1.45 at 1 psid	41.06
DC-IL-VG-4-R	1.8 at 1 psid	50.9

# Product Operation

## IsoLogic™ Module

The IsoLogic Module uses a Bluetooth connection to communicate humidity and temperature information to a mobile device (see FAQ for list of compatible devices).

### By the Numbers:

1. Sealed Rubber Cap
2. Three AAA Batteries
3. Push Button
4. Battery indicator LED
5. Saturation Direction LEDs

### Materials & Components:

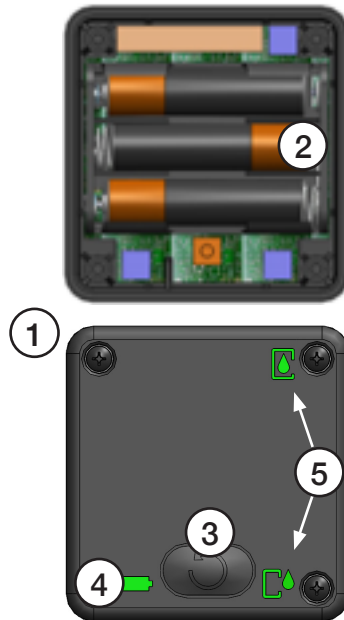
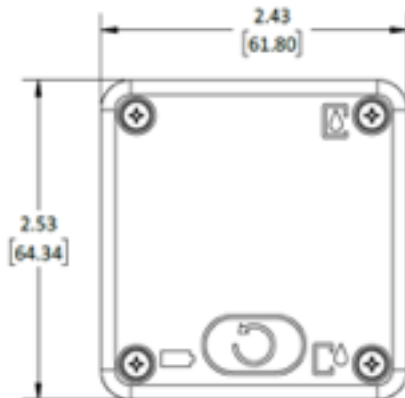
- Module Casing: Polycarbonate, Steel (screws, ball plunger)
- Module Cap: Thermoplastic Elastomers (TPE), Steel (screws, ball plunger)
- Circuit Board: LED lights, FR4 Fiberglass (RoHS compliant)
- Batteries: 1.5V Alkaline: AAA (Manganese Dioxide, Zinc, Potassium Hydroxide, Graphite)

### Recommended Temperature Range

*Based on Duracell battery operating temperature range*

- -4°F to 130°F
- -20°C to 54°C

### Dimensions & Connections (in/mm):



# Product Operation

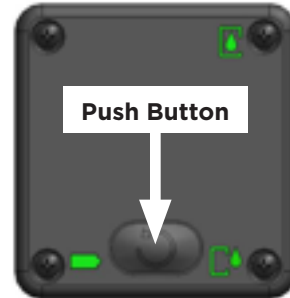
## Module Indicators

Normal State



Test

Push button on module to view Breather Life, Saturation Direction and Battery Life



## Battery Life

### **GREEN**

Batteries are charged  
(100-21% Remaining Life)



### **YELLOW**

Alert - Batteries are draining  
(20-11% Remaining Life)



### **RED**

Warning – Batteries are drained  
(10-0% Remaining Life)  
Light will flash intermittently



## Breather Life

### **GREEN**

Breather has 100-21%  
Remaining Life



### **YELLOW**

Alert - Breather has 20-1%  
Remaining Life



### **RED**

Warning – Breather has 0%  
Remaining Life  
Light will flash intermittently





# Product Operation

## Module Indicators

### Saturation Direction

#### **TOP**

Moisture is coming from the asset headspace



#### **BOTTOM**

Moisture is coming from the ambient air



#### **BOTH**

Moisture is coming from the asset headspace and ambient air



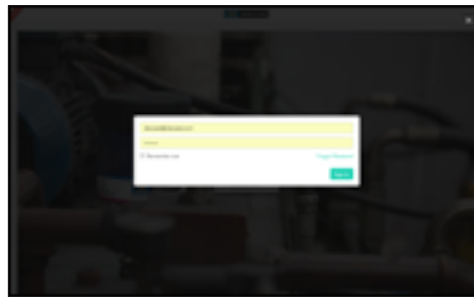
*\*Amount of saturation may result in green, yellow or red indicator lights as described in above section.*

# Product Operation

## IsoLogic™ Web Portal

descaseisologic.com

1. Register for your Des-Case account by clicking the “Sign Up” button
2. After initial registration, click Sign In to access your account
3. An email will be sent to the address provided in order to complete registration



## Assets

A snapshot view of all connected assets, including:

- Breather Life
- Saturation Direction
- Temperature
- Battery Life
- Last Sync (date and time of most recent data sync)
- Download

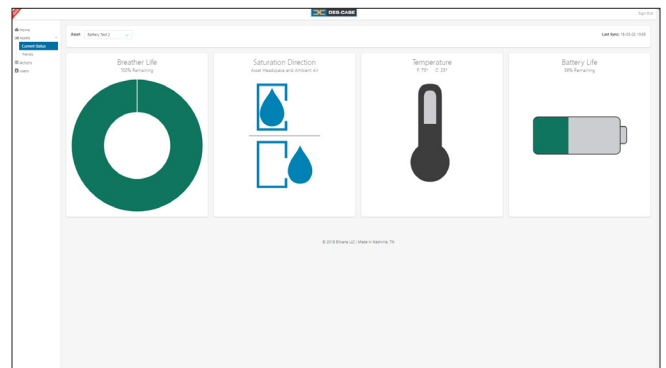
Asset	Breather Life Remaining	Saturation Direction	Temperature	Battery Life Remaining	Last Sync	Download	Remove
Breather Unit 1	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 2	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 3	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 4	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 5	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 6	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 7	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 8	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 9	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 10	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 11	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 12	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 13	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 14	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 15	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 16	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 17	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 18	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 19	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 20	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 21	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 22	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 23	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 24	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 25	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 26	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 27	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 28	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 29	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R
Breather Unit 30	100%	Asset HeadSpace	7.80°C (20°)	100%	10-04-2018 11:02	A	R

Download a CSV file of all breather data related to one of the connected assets.

## Current Status

A visual dashboard of Breather Life, Saturation Direction, Temperature and Battery Life.

- Breather Life – Monitors the saturation level of the breather. Breather is fully saturated at 0% remaining and has reached end of useful life.
- Saturation Direction – Indicates where humidity is adsorbed (asset headspace, ambient air, or both).
- Temperature – Measures the temperature of the breather
- Battery Life – Monitors battery life. Batteries expire at 0% remaining.



Switch between assets at the top of the page by using the dropdown menu.

# Product Operation

## Trends

A historical view of Breather Life, Saturation Direction, Temperature and Battery Life. Select a custom time period for each asset, displaying one or more breathers in one view.

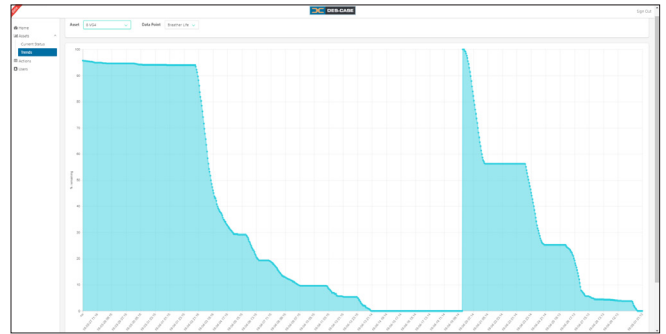
Select Data Point to view from dropdown menu at top of the page.

Switch between assets at the top of the page by using the dropdown menu.

Scroll over the data points for a specific time and date reading.

Things to consider:

- A sudden change in temperature
- A sudden loss of breather life
- An unexpected change in direction



## Actions

Send text and/or email alerts for predetermined criteria.

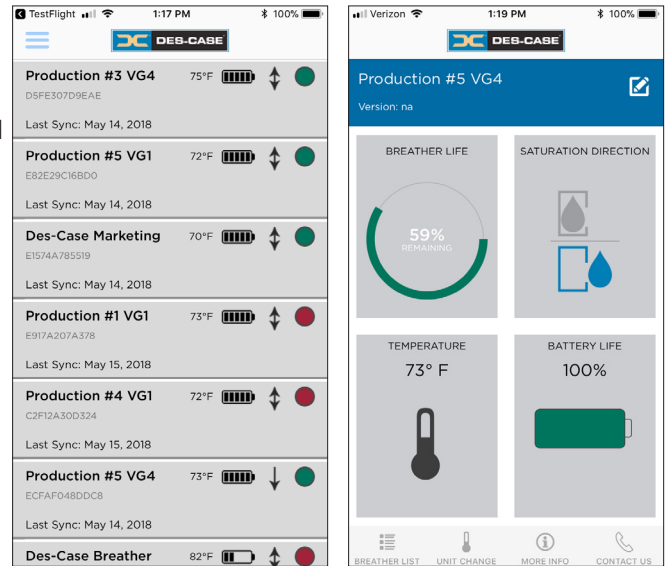
Asset	Breather Life Remaining	Battery Life Remaining
Asset 1	100%	100%
Asset 2	100%	100%
Asset 3	100%	100%
Asset 4	100%	100%
Asset 5	100%	100%
Asset 6	100%	100%
Asset 7	100%	100%
Asset 8	100%	100%
Asset 9	100%	100%
Asset 10	100%	100%
Asset 11	100%	100%
Asset 12	100%	100%
Asset 13	100%	100%
Asset 14	100%	100%
Asset 15	100%	100%
Asset 16	100%	100%
Asset 17	100%	100%
Asset 18	100%	100%
Asset 19	100%	100%
Asset 20	100%	100%

# Product Operation

## Des-Case IsoLogic™ App

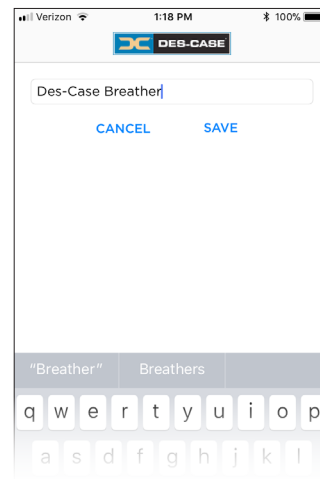
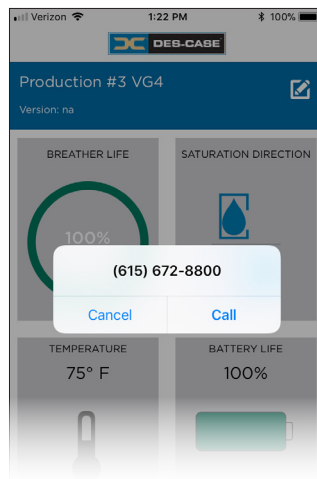
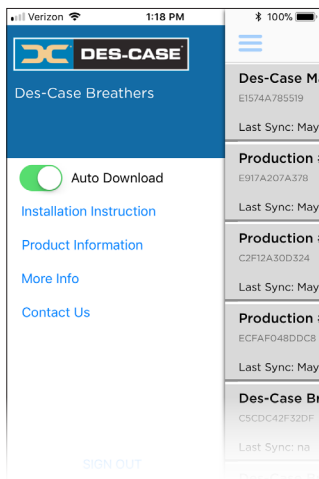
The Des-Case IsoLogic App provides a current visual dashboard of all connected assets, including:

- Breather Life – Monitors the saturation level of the breather. Breather is fully saturated at 0% remaining and has reached end of useful life.
- Saturation Direction – Indicates where humidity is adsorbed (asset headspace, ambient air, or both).
- Temperature – Measures the temperature of the breather
- Battery Life – Monitors battery life. Batteries expire at 0% remaining.



## Other App Features

- Unit Change – Change the temperature unit to degree Celsius or Fahrenheit by clicking on this button
- Breather List – A list of all connected assets
- More Info – A portal of resources, including product manual, installation instructions and more
- Contact Us – Email or Call your Des-Case support representative (contact method dependent on device settings)
- Find Breather – Flashes battery LED light on module to indicate which breather and module you are connected to
- Change Asset Name - Change the name of your asset in the Des-Case App.



# Product Operation

## TROUBLESHOOTING AND FAQ

### Replacement Breather Cartridges

Order replacement breather cartridges through your Des-Case sales representative. Replacements are sold in cases of six.

Replacement Cartridge Product Numbers:

VG-1 Replacement Cartridge: DC-IL-VG-1-R

VG-4 Replacement Cartridge: DC-IL-VG-4-R

### DO NOT DISCARD THE MODULE.

The module remains with the asset and does not need replaced each time a new breather cartridge is installed.

### Compatible Mobile Devices

Apple iPad (Air, Mini, Pro)

Apple iPhone (5S to current)

Samsung Tablet (Galaxy Tab 4, Galaxy Tab A)

Samsung Phone (Galaxy 6S to current)

Google/LG Tablet (Nexus 7, Nexus 9)

Google/LG Phone (Nexus 5X, 6, 6P)

Motorola Phone (Droid Turbo 2, MOTO G (2nd generation), MOTO X (2nd generation))

Other devices may be used if they operate with Bluetooth 4.0 and higher, and meet the following criteria:

- Android
  - Android OS 5.0 and higher
- Apple
  - iOS 10.0 and higher

### Change Asset Name

Change the name of your asset in the Des-Case App.

### Remove Assets from List

On the Asset page in the Des-Case Web Portal, select “Remove” near the asset to delete. Consider downloading the asset data CVS file prior to removing the asset from your account.

To remove from mobile devices, swipe left (delete).

*If an asset is unintentionally removed, it can be restored by synchronizing the module using the Des-Case App.*

### Multiple Users

Multiple email addresses can access data from the same breathers/modules if both accounts sync their devices with the module.

# Product Operation

## TROUBLESHOOTING AND FAQ *(cont.)*

### Disposal

Never dispose of breather or module in fire. Dispose of breather cartridge, module and batteries in accordance with local regulations.

### Updating the App

Updates are available in iOS and Android app stores.

### LED Indicator Lights

- Flashing Lights (Remaining battery life has reached 10-0%; Remaining breather life has reached 0%)
- Lights are Not Illuminating (Batteries are fully drained)

### App is Not Connecting to Module

Possible causes include:

- Out of range (100 feet)
- Bluetooth connection is disabled
- Batteries are fully drained

### Data is Not Syncing

Possible causes include:

- Loss of internet connection
- Firewall or other security issue

### Why Isn't the Breather Blue?

We have eliminated the opportunity for subjectivity by removing the color indicator. With the internal sensors, users now have a digital reading of the breather's remaining life.

### Breather Life

The replacement cartridge life differs depending on the asset, application and size of the breather. Our experts will work with users to select the appropriate size breather just as we currently do. Today, we expect most breathers to perform for at least 9-12 months.

### Battery Life

In normal operating conditions, the expected battery life for the three AAA batteries in the module is two years.

### Do I Need Wireless Internet?

Wireless internet is not required to download data with the app. Internet is required to upload data to the website.

### Bluetooth Range

The range for best use of the product is 100 feet.

### Humidity and High Temperature Environments

Battery life could be shortened in high or low temperature environments.



# [ Des-Case | IsoLogic™ ]



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