HUNTINGDON FUSION TECHNIQUES HFT

USER INSTRUCTIONS

PurgEye® 100 IP65

New Design With Aluminum Housing

Sealed Dustproof and Waterproof

Justram equipment inc.

Part of the Argweld® Family Range of Products

USER INSTRUCTIONS

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INTRODUCTION and FEATURES

The **PurgEye® 100** Weld Purge Monitor® has been specifically designed for the welding industry and is a low-cost, high-accuracy device for basic weld purge monitoring.

The **PurgEye® 100 IP65** features include:

- IP65 Sealed standard accredited.
- Dustproof sealed rated to level 6 (dust tight).
- Waterproof sealed to level 5 (protected against water jets).
- Newly-developed user replaceable sensor.
- Sturdy Heavy Duty Impact Resistant Storage case with IP-67 rating. Always store monitor in case when not in use.
- User calibrate button for both 20.9% and 0.1% levels of oxygen.
- Quick connect/disconnect leak tight purge line connections.
- One-piece leak-tight stainless steel sampling probe and hose connector.
- Rubber aspirator bulb (sampling pump).
- 2 x AAA batteries (included).
- Tripod mount with optional heavy Duty Gorilla tripod.
- Use of Gorilla Tripod enables hands fee use & protects monitor.
- Range 20.94% ambient to 100 ppm oxygen with calibration facility.
- Battery replacement indicator.
- Sensor replacement indicator.

Argweld® PurgEye® Family Range of Weld Purge Monitors®

Sensor Housing Connectors

The 'leak tight'sensor housing connectors are designed to accept 6 mm OD polyurethane purge gas tubing for its low oxygen outgassing rates and best weld purging results.

Small lengths of this tubing will be supplied with your PurgEye® instrument, so that you can join your normal purge exhaust hose as required.

We recommend that you purchase your desired length of polyurethane purge tubing from HFT® to eliminate leaks that might arise from joining multiple purge hoses together.

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Connecting the Purge Gas Tubing

The weld purge gas inlets and exhaust tubes simply push into the two tube connectors on the sensor housing cover as shown with the arrows on the picture. It doesn't matter which way around the tubes are connected.

If the aspirator bulb hand pump is not being used, always ensure that there is an exhaust tube of at least 152 mm (6") in length connected to the other tube connector (this may need to be longer if using very low flow rates, in order to prevent atmospheric oxygen from

UNDERSTANDING the **MONITOR BEFORE USE** continued

The best way to use your Weld Purge Monitor® is to connect the exhaust tube from your purging system to one of the quick fit connectors on the front of the monitor. Then allow the exhaust gas to flow freely over the sensor, out to atmosphere using the 6" length of tube provided.

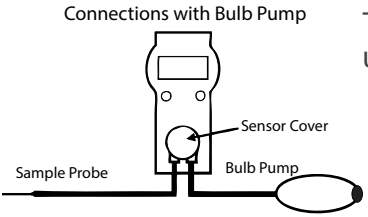
If that method is not practical, then use the probe and hand pump to extract samples from the inside of the pipe or vessel. The probe should be placed through a weld gap near the top of the purge space and inserted so that the bottom of the probe only goes a short way below the weld zone for most accurate results.
The weld joint must be taped and your probe inserted through the tape and into the weld gap.

Should the purge gas exhaust be insufficient to use the monitor with a free flow of exhaust gas (as described above) and if the vacuum bulb and sampling probe are used instead, the aspirator bulb will be attached to one quick fit connector on the front of the purge monitor, while the sampling probe and tube is attached to the other connector. (See diagram on next page).

Press the standby button once and the unit will turn on, initially it will display four dashes on the monitor. This indicates that the reading is over range (>40.00%).

Follow the full-scale calibration procedure to start using the monitor. (See page 8).

Connections with Sampling Bulb



This diagram shows connections for use with the 'bulb' as sampling pump.

As mentioned above, **the PurgEye® 100 'IP65'** can be used with a bulb as a sampling pump or connections for free flow.

In the case of free flow, always ensure that there is a minimum of at least 6" (152 mm) in length of polyurethane tube connected to the other pipe connector (see lower picture).

One piece leak tight probe and tube assembly for sampling purge gas through weld root (included).

Connections for Free Flow

Use this layout for zero calibration with 1 litre/min flow rate of 99.99% (grade 5) argon gas.

Tube to weld purge system.

152 mm (6") tail pipe (included).

© HFT®

Installing the Batteries

Remove the battery cover on the rear of the device and install 2 x AAA size standard alkaline batteries, ensuring the polarity is correct. Use only alkaline type AAA batteries. Be careful not to lose the tiny screw(s).

Turning on the Monitor (for the first time)

After installing the batteries, the monitor will automatically turn on. There is no need to press the on/off button. The display shows immediately 88.88 for a second and will then show a reading above 20.94.

Press the calibration button for the monitor to display 20.94, this may need to be repeated when the monitor is first used.

Note: Follow the full-scale calibration procedure to start using the monitor, (see special note overleaf).

Turning on the Monitor (thereafter)

Press the standby button on the right (on/off) and the monitor will turn on. Initially it will display 88.88 on the screen a second. The display will then show a reading above 20.94.

Full-Scale Calibration

Carefully remove the sensor housing cover (pull slightly and rotate the black round cover to remove) to expose the sensor element to atmospheric oxygen.

Replace sensor cover after two minutes. Then press and hold the calibrate button for 5 seconds. After this time period the monitor will read ~20.94%.

Leave the monitor a few seconds to ensure the reading has stabilised (this may take a couple of minutes after being switched on). If the reading varies significantly then hold the calibrate button again to re-calibrate the monitor.

Note: It is recommended that the calibration procedure be carried out each time the monitor is used for a new job to ensure that the gas lines are not retaining residual levels of argon gas and to ensure that the monitor is starting with a reading of 20.94%

Low Sensor and Low Battery Indicators

When the instrument displays a flashing "!" in the bottom left corner, it is indicating that it is time to replace the sensor. See spare parts list on page 14.

When the monitor displays the battery symbol, replace the batteries, see below.

Installing the Batteries

Remove the battery cover on the rear of the device, being careful not to lose the screws, and install 2 x AAA size standard alkaline batteries, ensuring the polarity is correct.

Use only alkaline type AAA batteries.

Installing a New Sensor

- Carefully remove the sensor housing cover.
- Always 'gently' rotate (quarter turn) the sensor housing cover while fitting or removing.
- Remove the sensor using the sensor removal tool by hooking it into the groove on the black part of the sensor, then simply rest the removal tool against the monitor and lever the sensor gently upwards.
- There is no membrane cover to remove on the sensor.
- After installation of the new sensor, reset the monitor by pressing the power button and calibration button at the same time then carry out the zero-correction facility.

Note: No force should be applied to the sensor, the sensor housing or the sensor cover. Do not squeeze the sensor with the sensor removal tool.

Zero Calibration (Correction) Facility

The **PurgEye® 100 'IP65'** Weld Purge Monitor®is set for use by our quality control procedures prior to the product shipping to you. However, occasionally, it may be necessary to use the zero-calibration facility.

Please use the instruction on the next page for the zero-calibration facility with extreme caution.

Once the zero-calibration facility has been used, it is vital that the instrument is placed on the argon gas facility for the allotted time schedule as shown on page 7.

The procedure in this instruction booklet should ideally only be used after fitting a new sensor and not done randomly without good reason.

ZERO CALIBRATION

When a new sensor is fitted or where greater accuracy is required at very low readings, you may want to zero the monitor.

This is done by first completing the full-scale calibration procedure above and then completing the following steps.

1. Switch the monitor on.
2. With older models, (non IP65 versions) we recommend that you start with a "Reset". Push the 'Cal' and the 'On/Off' buttons simultaneously and hold for 20 seconds, until 'Reset' appears in the display. Step 3 below is then unnecessary, so continue from step 4.
3. Repeat the "Full Calibration" procedure (See page 8).
4. Connect the sample tube directly to a supply of 99.99% Argon with a flow of 1 - 2 litres/min (2 - 4 CFH) using the freeflow method. (See page 6).
5. When the monitor has been reading for about 10 minutes and is displaying below 1%, press and hold the calibrate button for 5 seconds. The monitor will indicate calibration mode by flashing 'CAL' on the screen.

ZERO CALIBRATION
continued

6. Once the reading falls below 0.5% the monitor will wait for the reading to stabilise and then take a reference reading, this should take several minutes, the longer the better. Once this is complete the screen will stop flashing 'CAL' ›and display ~0.00%.
7. Now repeat the full calibration by pushing the 'cal' button until ±20.94 appears in the screen.

Your Monitor is now ready for use.

Again, do not randomly use this facility. It is preferable that this zero calibration only be carried out when the **PurgEye® 100 'IP65'** is fitted with a new sensor.

Note: The longer the purge time and the higher the purity of gas, the better the low level accuracy.

We will gladly carry out the replacement sensor activity for you and provide you with an up to date calibration certificate. Please ask us. Connect with us at info@justram.com or call 1-800-668-9875, or visiti www.justram.com

Part Descriptions	**Order Code**
Replacement sensor	APIS100
Sensor removal tool	APIS102
Tripod (Heavy Duty Gorilla Tripod)	APIS104
Sampling tube 6 mm OD x 2 m length	APIS108
'Leak Tight' stainless steel probe	APIS109
Aspirator bulb (sampling hand pump)	APIS110
Sensor housing cover	APIS111-1
Battery cover	APIS112
Carrying storage and presentation case	APIS140-2-HD
ReCalibration	APIS150
Filter - For protecting sensor	APISZFC-74

Note: Whenever the sensor is replaced: DO NOT apply force to the sensor or the sensor housing as this can cause damage to your instrument.

A Quick Guide in the Event of Problems

If the reading does not fall below 20.9% after a reasonable purge time, or in the event that your reading does not pass your expected level of oxygen, please do the following:

- Check that the correct purge tubes are used for the quick fit 'leak tight' connections in case air is leaking into the instrument.
- Check the purge gas quality at the source by taking your PurgEye® 100 directly to the source (i.e., gas bottle) to verify your purge gas quality as well as ensuring that the connections are 'leak tight'.
- Check the cleanliness of the components being welded.
- Could there be excessive cleaning material or dirt that might be outgassing?

Note: Excessive oil and grease will outgas and may produce copious quantities of oxygen until all contamination has been purged.

If you need to reset the monitor, begin by turning it off.

Then press and hold the "Cal" button and the "On" button simultaneously. Hold both buttons until the word "reset" appears on the screen.

You will then need to calibrate the monitor at 20.94% and at 0%.

Argweld® **PURGEYE® FAMILY RANGE** of **WELD PURGE MONITORS®**

The World standard **PurgEye® 100 IP65 Hand Held**

- Push button 'Auto Calibration' feature at precisely 100 ppm as well as at ambient (20.94%).
- Leak tight probe assembly.
- Low battery indicator and low sensor indicator.
- Increased sensor reading range.
- Quick connect/disconnect leaktight fittings for gas purge tubing.

The **PurgEye® 200 IP65 Hand Held with PurgeNet™**

- Readings from 1,000 down to 1 ppm.
- Internal electro-mechanical pump with 1 l/m flow rate.
- USB lead included to control PurgeLog™ software.
- Long life, faster response sensor.
- Warning alarm levels between 1 and 999 ppm.
- Flow detection for accurate reading of gas samples.

The **PurgEye® 300 Nano**

- 'New' unique solid state long life sensor.
- Less than 60 seconds warm up time.
- No need to constantly calibrate, integrally mounted sensor.
- Low cost, small, lightweight monitor reads accurately to 1 ppm, accurate to 10 ppm.

The **PurgEye® 500 Desk with PurgeNet™**

- PurgeLog™ data logging software* included.
- Reads PPM or Percentage.
- Specially designed, extra long life sensor with faster response.
- OLED screen with stunningly clear, bright figures and text.
- Reading from 1000ppm - 1ppm.
- Audible alarm features to indicate low and high levels of oxygen.
- Visual Alarm System as an accessory.
- Integral pump with flow rate 3.5 - 4 l/m.

The **PurgEye® 600 Touch Screen**

- Reads from atmosphere all the way down to 1 ppm in one instrument, accurate to 10 ppm.
- PurgeLog™ data logging software* included.
- Large touch screen with on-screen graph of the current weld.
- Internal sampling pump with gas filtration.
- User port with two outputs to control welding equipment or activate alarms in the event of a rise in oxygen levels.
- No more wet cells to keep replacing and recalibrating.
- Quick fit and quick disconnect 'leak tight' purge tube fittings.

The **PurgEye® 1000 Remote with PurgeNet™**

- Reads from 1000 ppm down to 1 ppm, accurate to 10 ppm.
- Comes with a hand held display and a 10 m lead as standard.
- Optional 100 m reel of outdoor cable with locking connectors.
- Reels of extensions cable can be connected to make longer leads upto 1 km!
- Easy to pull through pipes.
- 1" ø stainless sensor holder to place at the weld site inside pipes to send purge data to the monitor up to 1km away.

The **PurgEye® 1500 Site IP68 with PurgeNet™**

- Reads from 1000 ppm down to 1 ppm, accurate to 10 ppm.
- Internal electro-mechanical pump with 3 l/m flow rate.
- USB lead included to control PurgeLog™ software.
- IP65 rated with the lid open, IP68 with lid closed.
- Warning alarm levels between 1 and 999 ppm.
- Flow detection for accurate reading of gas samples.
- Power on / off with standby button for sensor warm up.

PurgeNet™ controls the welding power sources such as orbital welders and any other automatic welding systems to switch on and off according to oxygen levels, transferring data easily with the ability to link to external devices.

WARRANTY

All products are thoroughly tested to our Quality Control Procedures prior to leaving our manufacturing facility. Should you encounter a problem with your product, please notify us immediately upon receipt.

Huntingdon Fusion Techniques HFT® warrants this product to be free of defects in workmanship and material, with exceptions stated below.

Warranty applies for normal and intended use of the product.

Huntingdon Fusion Techniques HFT® will not be held responsible for any incorrect use of the product.

For further warranty information, please refer to our terms and conditions.

All warranties shall not apply to any product or component which has been repaired or altered by anyone other than Huntingdon Fusion Techniques HFT®.

Huntingdon Fusion Techniques HFT® shall not be liable for indirect, special, incidental or consequential damage or penalties and does not assume any liability of Purchaser, or to others, for injury to persons or property.

This warranty is in lieu of all other warranties, expressed and implied.

E&OE

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