

Introducing the Riken Keiki GX-3R Series

Weatherall History

1950's

WEATHERALL MINING EQUIPMENT AND INSTRUMENTS LIMITED was formed by founder Mr Helmut Weatherall who supplied Riken Keiki Model 18 to the British Coal Board for use in all UK coal mines.

1960's

In the Late 1960's Mr WEATHERALL developed the Model 18 to measure anaesthetic gases in conjunction with Dr John F Nunn, an Anaesthetist at the London Hospital. The results of this research were published in the British Journal of Anaesthesia, helping to validate the principle of interference refractometry as a technique suitable for measuring anaesthetic gases. Following this development, Riken produced the Model 18 for Halothane.



Model FI-8000 (2015)

1981

WEATHERALL EQUIPMENT & INSTRUMENTS LIMITED was formed after Mr Weatherall retired, and the company was taken over by Mr Roger Worthington.

1995-2001

NEC Semiconductor Plant was built in Scotland and over the next 6 years Weatherall installed and serviced over 1000 Riken detection points.

NEC



2005-2007

Through one of our Marine partners we won Tenders to supply portable gas detectors to Shell and BP.

2015-2019

Weatherall selected as supplier to Bluechip companies , eg GE , National Grid , ST Micron , TATA Steel and Drax Power

Riken Keiki History

1925 Dr. Jiro Tsuji, founder of Riken Keiki, develops the Interferometer (world's first combustible gas monitor) based on lightwave interference.

1939 Riken Keiki Fine Instrument Co., Ltd. is established and the Interferometer gas monitor is in full production.

1959 Riken develops combustible gas monitors based on catalytic sensors.

1969 Riken builds the first combination combustible and oxygen portable gas monitor with alarm model GX-3.

1978 Riken introduces the world's first 3 gas monitor with alarm, model 1641.

1982 Riken introduces the world's first 3 gas, belt worn monitor, the GX-82.

1986 Riken presents the GX-86, world's first 4 gas, belt worn portable monitor.

1997 Riken offers the GasWatch, the first wrist worn multi- gas monitor.

2001 Riken introduces the GX-2001, Worlds smallest 4 gas monitor.

2009 Riken introduces the GX-2009, Worlds new smallest 4 gas monitor.

2015 Riken introduces the FI-8000 the latest in a long line of Interferometers

2016 Riken launches the GX-6000, a 6 gas instrument using a variety of standard and smart sensors including PID, IR, Electrochemical, IR and Galvanic.

2019 Riken Launches GX-3R The worlds smallest 4 and 5 gas personal monitors with Bluetooth and Lone worker monitoring such as Man down and panic button plus a host of other new innovative features .



The GX-3R

The Worlds Smallest Multi Gas Detectors

GX-3R



Confined Space

GX-3R Pro



Confined Space Plus



- Worlds Smallest and Lightest 4 Gas monitor
- Impact , Dust and Water Resistant IP66/68
- 3 Year Warranty (including O₂ sensor)



- 4-gas plus extra slot for toxic or IR sensor
- Toxic options : 2019 CO₂ / SO₂
: 2020 NO₂ / HCN
: 2021 PH₃ / CL₂ / NH₃
- Wireless communication with mobile app
- Man-Down and Panic Alarms
- Alkaline/Rechargeable option

The GX-3R and GX-3R Pro's small size enables them to easily be clipped into the "Breathing Zone."



The breathing zone is within a 25cm radius of the worker's nose and mouth. HSE G409 COSHH General Guidance advises that "Personal sampling' is taking an air sample near the worker's breathing zone to measure the amounts of airborne substances inhaled for a stated task"

Size Matters in 'The Breathing Zone'

Size & Weight



58 x 65 x 26mm
100g



73 x 65 x 26mm
120g



120 x 68 x 32
233g



135 x 80 x 35 mm
232g



120 x 80 x 35
228 g



124 x 71 x 32
220g



135 x 50 x 48
228g

The GX-3R weighs about half of the average 4-gas detector!

Sensor Advancements



GX-3R Pro

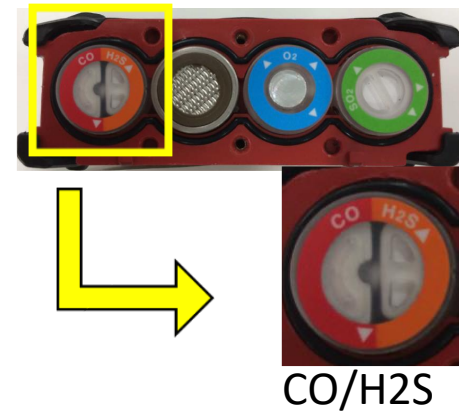
4 Sensor slots up to 5 gases
Super-toxic options include CL2
and NH3 in 2020 can be retrofitted



GX-3R

3 Sensor Slots for up to 4
gases

Dual Sensor



The GX-3R simultaneously monitors:

- CO -- Carbon Monoxide
- H2S -- Hydrogen Sulphide
- LEL -- Combustibles
- O2 -- Oxygen

H2 compensated CO sensor option available



All gas readings displayed

New Sensor Features :

- Dual filament design gives 40x added silicone poisoning resistance to LEL sensor
- Lead free electro-chemical sensor design gives O2 sensor a 3-5 year lifespan
- Eliminate H2 interference with CO readings with optional H2 compensated O2 sensor

The GX-3R Pro simultaneously monitors:

- CO -- Carbon Monoxide
- H2S -- Hydrogen Sulphide
- LEL -- Combustibles
- O2 -- Oxygen

Plus 5 Channel for Toxic and IR sensors



New Sensor Features :

- IR sensor can monitor CO2 in ppm or % vol. *
- EC sensor for SO2
- HCN, NO2, NH3 and Cl2 planned for 2020

H2 compensated CO sensor option available



Sensor/Filter replacement



Non-compliance Indicator

Easily identify workers using instruments that have not been calibrated, bump tested, or have been in alarm.
Red LED's flash every 30 seconds



Non-compliance indicator in both GX-3R and GX-3R Pro

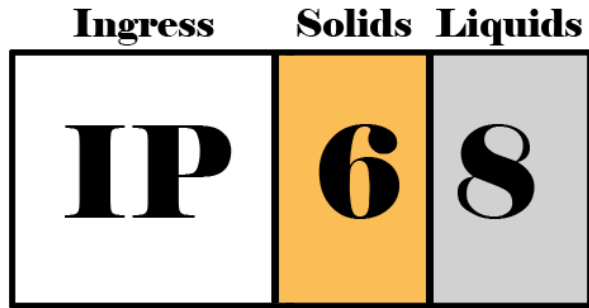
Concussion Resistant

Drop-tested from over 7 meters.

Handles the conditions of extremely rugged work environments



IP-66 / IP-68 Rating



The first digit shows that it is dust proof

The second digit shows it is waterproof

- The GX-3R is IP-66 rated because it can withstand jets of water
- It is also IP-68 rated because it can withstand submersion in water
- Critical for withstanding harsh industrial environments

3 Year Warranty

- The GX-3R has a 3 year warranty
- The warranty covers workmanship of the device AND the sensors including the Oxygen Sensor



GX-3R Pro—Alarms

Panic Alarm :

User can trigger instrument into alarm by tapping it twice to notify others of an immediate hazard.



Man Down Alarm :

Man-down alarm sounds if no motion is detected for 30 seconds (can be user programmed), increasing worker safety.



3 Alarm Types

- **Visual**
LED light indicators
Alert you to gas, low battery, and failure alarms
- **Audible**
95 decibel buzzer
Buzzer sounds for gas alarms, malfunctions, low battery voltage, and as an indicator
- **Vibration**
An internal motor vibrates for gas alarms, unit malfunctions, and as an indicator



2 Button Operation



2 Glove-friendly Buttons

Easy to use!

Rechargeable Lithium-Ion Battery

- 25 hours of continuous operation (40 hours in Long battery mode)
- Lithium Ion battery
- Complete recharge in 90 minutes



Easy and convenient charging cable, no cradle required!

Charging the instrument

- 25 hours of continuous operation
- Lithium Ion battery
- Complete recharge in 90 minutes



Multi-unit AC Adapter (49-0134)

Once charged, the light will go from
orange to **green**

A 30 minute charge provides 8 hours of operation time

High Capacity Data Logging

Automatically logs data every 5 minutes for 300 hours of measurement. (logging interval can be modified)

Infrared Communication Port



Transfer data from the instrument to a PC with a USB/IR adaptor or with the SDM-3R docking station.

RP-3R Sampling Pump



- Clip-on sampling pump has a 30m range and independent power supply
- Continuously operates for 10 hours
- Eco mode will operate up to 16 hours



Retain TWA and PEAK values from last use to pick up where you left off.



Stealth Mode

Set the alarm to notify silently—perfect for law enforcement and other applications

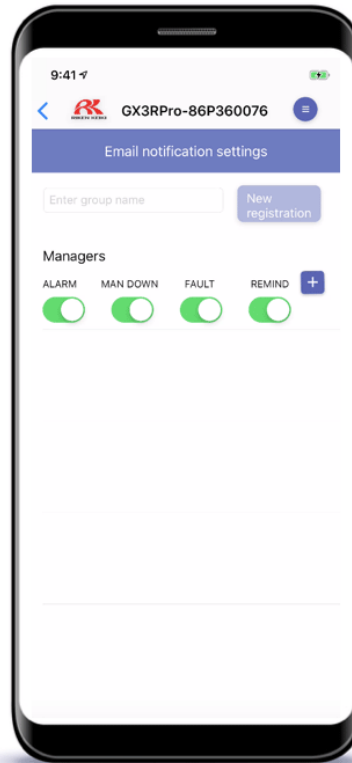
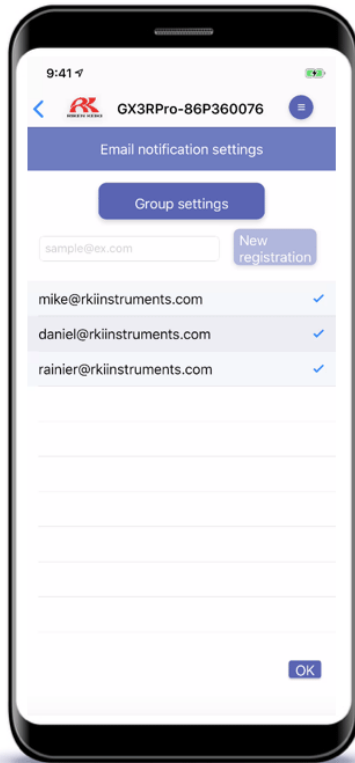
Available in both the GX-3R and GX-3R Pro

- Bluetooth connectivity
- Direct readings from instrument
- Email or text alarm notifications with GPS locations
- Digital values/Graphical display
- Alarm indications
- Set bump/cal reminders, alarm parameters, and other GX-3R Pro settings
- Find my instrument feature
- Available on iOS and Android



Configurable Alarm Notifications

Email or text contacts who should receive alarm notifications



GX-3R Pro—Connectivity

Configure the types of alarms to send

- Gas alarm
- Man down
- Instrument fault
- Past due service

Email or text * your contacts alarm locations

CAUTION[Alarm:Warning O2] - Inbox

Message

Delete Reply Reply All Forward Attachment Meeting Move Junk Rules Read/Unread Categorize Follow Up

CAUTION[Alarm:Warning O2]

rainierki@gmail.com <rainierki@gmail.com>
Rainier Navidad; Mike Johnson
Monday, March 25, 2019 at 12:15 PM
[Show Details](#)

Occurrence Time: 3/25/19 12:15
Location: 37.5994267,-122.0360809
[\[https://www.google.co.jp/maps?q=37.5994267,-122.0360809\]](https://www.google.co.jp/maps?q=37.5994267,-122.0360809)

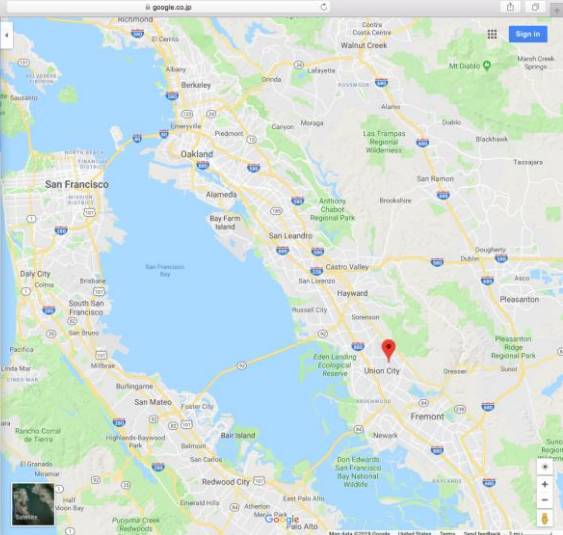
Serial No.: 86P360076
Manufacturing No.: 86P360076
Description: Alarm:Warning O2
User ID: -----
Station ID: -----
Device Name: GX-3RPro
Gas Name: CH4 O2 H2S CO SO2
Full Scale: 100%LEL 40.0% 200.0ppm 2000ppm 100.0ppm
Warning: 10%LEL 19.5% 5.0ppm 25ppm 2.00ppm
Alarm: 25%LEL 18.0% 30.0ppm 50ppm 5.00ppm
AlarmH 50%LEL 23.5% 100.0ppm 1200ppm 5.00ppm
STL: --- 5.0ppm 200ppm 5.00ppm
TWA: --- 1.0ppm 25ppm 2.00ppm
Concentration: 0%LEL 20.9% 0.0ppm 0ppm 0.00ppm
Owner Information: Rainier
Company Name: RKI
Department Name: Marketing

37.5994267,-122.0360809

37°35'57.9"N 122°02'09.9"W
37.599427, -122.036081


Directions Save Nearby Send to your phone Share

Union City, CA 94587
10007+OH Union City, California
Add a missing place
Add your business



Text Message
Friday 11:53 AM

GX-3RPro 86P360076
[Alarm:Warning O2]
[18.7%]



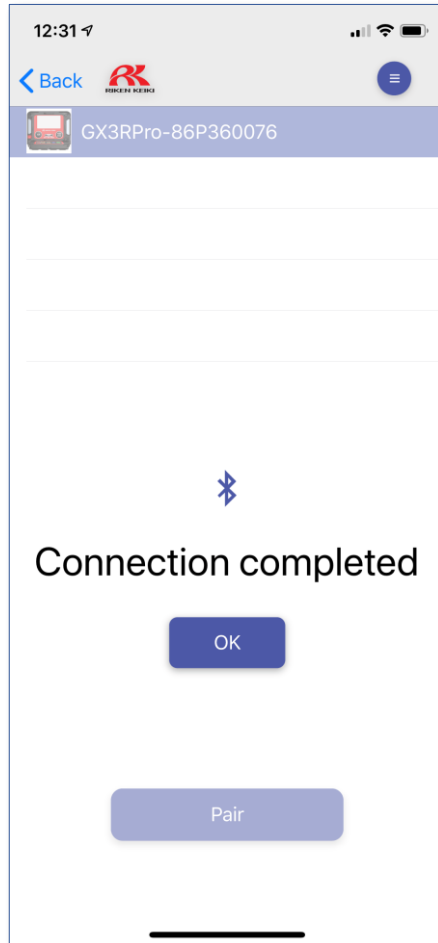
Map data ©2019 Google

37°35'58.5"N
122°02'10.5"W
google.co.jp

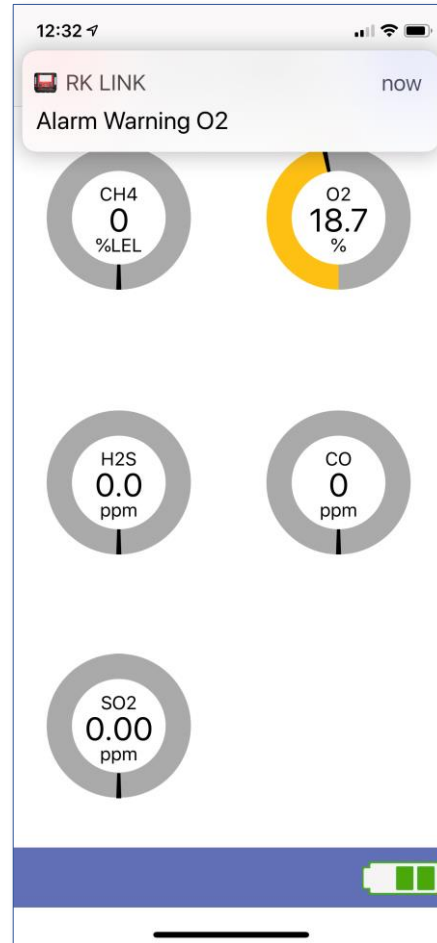
Text Message

*SMS available early 2020

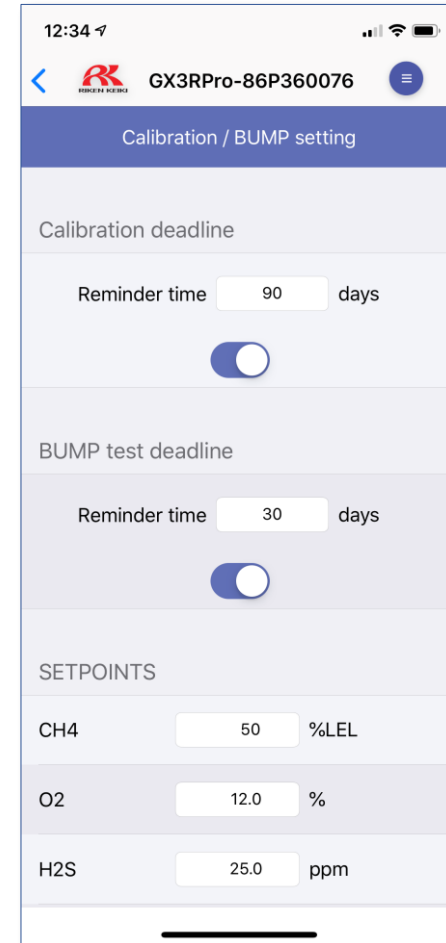
Easy to Pair



Phone Notifications



Instrument Settings



* SMS available early 2020

SDM-3R Calibration Station



SDM-3R Calibration Station

- Charge, bump test, calibrate and alarm test instruments using less calibration gas
- Automatically schedule tests
- Bank up to 10 units with tubeless connection
- Access instrument data via USB or ethernet



SDM-3R Calibration Station

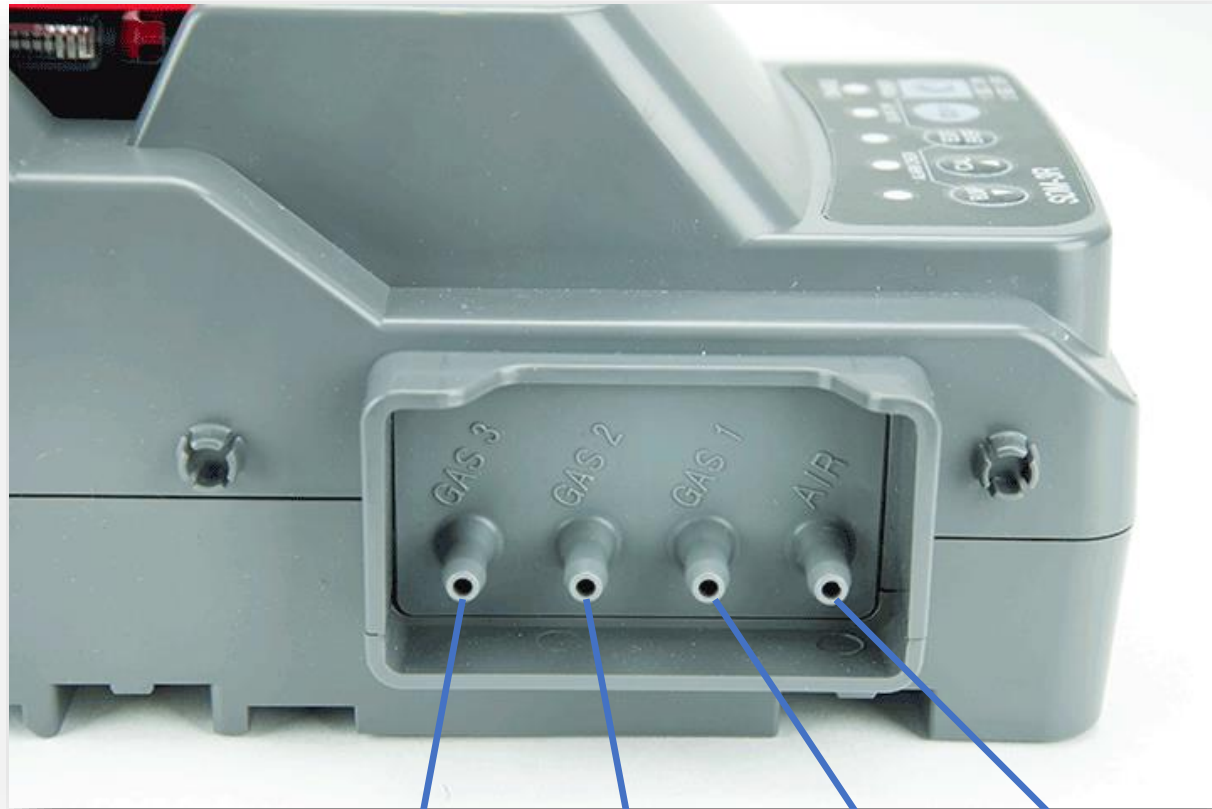
- Automate bump tests, calibrations, charging, & data retrieval
- Operate up to 10 stations with 1 set of calibration equipment
- Automate entire process
- Configure parameters
- Archive Bump Test and Calibration records
- Connect directly to a LAN network





- Bump Time: 10 seconds
- Gas Consumption: 250 ml / min
(About 50% less gas usage than other 4 gas detectors)
- Output: Internal memory / USB drive / LAN cable / USB Cable to PC
- Accepts both GX-3R and GX-3R Pro

SDM-3R: Gas Ports



Gas 3

Gas 2

Gas 1

Air port

SDM-3R: USB port



USB port



Ethernet

PC Connection

AC power

GX-3R Placement



Yellow tab up



Yellow tab down