| | K2 INGENIERÍA S.A.S. | VER. N° 02<br>15/07/2020<br>FOM303-42 |
|---|---|---|
| | FORMATO DE VERIFICACION EQUIPOS O3 ENVEA | |

| | | | | | |
|---|---|---|---|---|---|
| FECHA: | 05/04/2022 | EQUIPO: | O342e | SERIAL: | 1095 |
| PROYECTO: | 2740042CDMB-REDOLORES6-20 | NORTE: | | CONTAMINANTE: | O3 |
| ESTACIÓN: | Centro Cutural Daniel Mantilla Obregozo - CDMB CE | OESTE: | | SERIAL CALIBRADOR: | AIRQRATE 2021-00162 -BIOS DEFENDER 139641 |

**Configuración EPA**

| | | | |
|---|---|---|---|
| Escala: | 0-500 ppb | Fecha instalación filtro Teflón | Abril 05 2022 |
| Tiempo Automatico Respuesta: | 11 | Prueba de Fugas | 0.21 |
| Temperatura Operación °C (± 2) | 25.73 | Flujo lpm (± 5%) | 0.837 |

**Condiciones Ambientales**

| Item | Equipo | Calibrador | Diferencia |
|---|---|---|---|
| Humedad Relativa Ambiente (5%) | -- | -- | #¡VALOR! |
| Temperatura Ambiente °C (± 2) | -- | -- | #¡VALOR! |
| Presion Barometrica hPa (±1) | -- | -- | #¡VALOR! |
| Humedad Relativa Shelter (5%) | -- | -- | #¡VALOR! |
| Temperatura Shelter °C (± 2) | -- | -- | #¡VALOR! |

**Revisión Señales MUX O342**

| Signals | Min. values | Typical values | Max values |
|---|---|---|---|
| Reference zero filter | 0 | 365 | N. A. |
| UV Measure signal | 500 mV | 2200 mV | 3000 mV |
| UV Reference signal | 500 mV | 2200 mV | 3000 mV |
| LED current | 2 mA | 3 mA | 15 mA |
| Internal temperature | 5 °C | 30 °C | 45 °C |
| Absorption medium temperature | + 5 °C | + 25 °C | + 45 °C |
| Flow rate | 30 NL/h | 55 NL/h | 90 NL/h |
| Atmospheric pressure | 300 hPa | 1002 hPa | 1200 hPa |
| Pump pressure | 200 hPa | 340 hPa | 600 hPa |
| Absorption medium pressure | 300 hPa | 990 hPa | 1200 hPa |
| +4 V supply | 3950 mV | 4000 mV | 4050 mV |
| +3.3 V supply | 3.2 V | 3.3 V | 3.4 V |
| +12 V supply | 11.8 V | 12 V | 12.2 V |
| +24 V supply | 23,4 V | 24,0 V | 25.0 V |
| +5 V supply | 4.8 V | 5 V | 5.2 V |
| Sensor +5 V supply | 4.9 V | 5 V | 5.1 V |
| +24V current | - 0.1 A | 0,5 A à 3 A | > 6 A |
| GND | -1 mV | 0 mV | +1 mV |
| GNDA | -1 mV | 0 mV | +1 mV |

| Canal | Valor |
|---|---|
| 1 | - |
| 2 | 868.1 |
| 3 | 1501.8 |
| 4 | 18.8 |
| 5 | 25.7 |
| 6 | - |
| 7 | 50 |
| 8 | - |
| 9 | 443 |
| 10 | - |
| 11 | 4036.4 |
| 12 | 3.3 |
| 13 | 12 |
| 14 | 24 |
| 15 | 5 |
| 16 | 5 |
| 17 | 0.5 |
| 18 | - |
| 19 | - |

**Ajuste Span y Zero**

| | |
|---|---|
| Zero anterior | -0.102 |
| Zero Nuevo | -0.003 |
| K anterior | -- |
| Valor de gas Span | 402.3 |
| Valor de lectura (sin compensación) | 403.5 |
| K nuevo | #¡VALOR! |

$$Autoajuste\ del\ zero$$

$$K(nuevo) = K(anterior) * \frac{valor\ de\ gas\ span}{Valor\ de\ la\ lectura\ (\text{sin}\ compensación)}$$

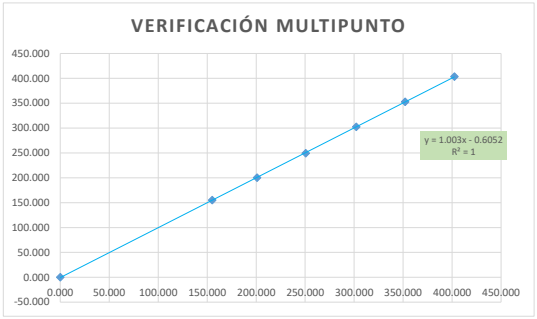
**Verificación ZERO y SPAM**

| Aire Zero (ppb) | Medición Zero Equipo (ppb) | Spam (ppb) | Medición Equipo (ppb) | Dif (Aire Zero - Zero Equipo) % | Dif (Q Calibrador - Q Equipo) % |
|---|---|---|---|---|---|
| 0.00 | -0.102 | 402.30 | 403.50 | -0.10 | 0.30 |

**Verificación / Calibración Multipunto**

| Puntos | [Gas] Referencia | [Gas] Medido | Mejor Línea Ajuste | Crit. Aceptación | Crit. Aceptación |
|---|---|---|---|---|---|
| 1 | 0.000 | -0.003 | 0.00 | 0.00 | 0.00 |
| 2 | 155.000 | 155.100 | 154.85 | 0.25 | 0.16% |
| 3 | 200.800 | 200.100 | 200.79 | 0.69 | 0.34% |
| 4 | 250.600 | 249.500 | 250.74 | 1.23 | 0.49% |
| 5 | 302.100 | 302.400 | 302.39 | 0.01 | 0.00% |
| 6 | 352.000 | 352.900 | 352.44 | 0.46 | 0.13% |
| 7 | 402.300 | 403.500 | 402.89 | 0.61 | 0.15% |

| | | |
|---|---|---|
| | **K2 INGENIERÍA S.A.S.** | VER. N° 02<br>15/07/2020<br>FOM303-42 |
| | FORMATO DE VERIFICACION EQUIPOS O3 ENVEA | |




Observaciones:

| | | | |
|---|---|---|---|
| Nombre Elaboro | ADRIANA LUCIA GARCIA SANCHEZ | Nombre Reviso | GERSON ORTIZ |
| Firma Elaboro | ADRIANA LUCIA GARCIA SANCHEZ | Firma Reviso | GERSON ORTIZ |

| | K2 INGENIERÍA S.A.S. | Versión. N° 01<br>07/02/2019 |
|---|---|---|
| | FORMATO VERIFICACION DE SEÑALES MUX O3 | FOM303-42 |

FECHA: 05/04/2022 EQUIPO: O342e SERIAL: 1095
PROYECTO: 2740042CDMB-REDOLORES LATITUD:
ESTACIÓN: Centro Cutural Daniel Manti LONGITUD:

| Signals | Min. values | Typical values | Max values |
|---|---|---|---|
| Reference zero filter | 0 | 365 | N. A. |
| UV Measure signal | 500 mV | 2200 mV | 3000 mV |
| UV Reference signal | 500 mV | 2200 mV | 3000 mV |
| LED current | 2 mA | 3 mA | 15 mA |
| Internal temperature | 5 °C | 30 °C | 45 °C |
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| Flow rate | 30 NL/h | 55 NL/h | 90 NL/h |
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| +24 V supply | 23,4 V | 24,0 V | 25.0 V |
| +5 V supply | 4.8 V | 5 V | 5.2 V |
| Sensor +5 V supply | 4.9 V | 5 V | 5.1 V |
| +24V current | - 0.1 A | 0,5 A à 3 A | > 6 A |
| GND | -1 mV | 0 mV | +1 mV |
| GNDA | -1 mV | 0 mV | +1 mV |

**Revisión Señales O342e**

| Canal | Valor |
|---|---|
| 1 | - |
| 2 | 868.1 |
| 3 | 1501.8 |
| 4 | 18.8 |
| 5 | 25.7 |
| 6 | - |
| 7 | 50 |
| 8 | - |
| 9 | 443 |
| 10 | - |
| 11 | 4036.4 |
| 12 | 3.3 |
| 13 | 12 |
| 14 | 24 |
| 15 | 5 |
| 16 | 5 |
| 17 | 0.5 |
| 18 | - |
| 19 | - |

Elaboro: ADRIANA LUCIA GARCIA SANCHEZ Reviso:_____ GERSON ORTIZ

## Revisión Señales O342M

| Channel | Display | Parameters | Lower Limit | Typical | Upper limit |
|---|---|---|---|---|---|
| 1 | GND | Analog ground | 0 mV | 0 mV | + 10 mV |
| 2 | Int. T° | Internal temperature of the analyzer | 100 mV | _ | 600 mV |
| 3 | Lamp. T° | Measurement UV lamp temperature regulation | 500 mV | 550 mV | 600 mV |
| 4 | Gas T° | Gas temperature at measurement chamber output. | 100m V | _ | 500 mV |
| 5 | Flow | Voltage provided by flow rate sensor placed at measurement chamber output. | 1500 mV | 2000 mV | 2500 mV |
| 6 | Pressure | Vacuum pressure inside the measurement chamber | 3000 mV | 4000 mV | 5000 mV |
| 7 | -15 V ref | -15 V power supply | -1600 mV | 1500 mV | - 1200 mV |
| 8 | +15 V ref | +15 V power supply | 1200 mV | 1500 mV | 1600 mV |
| 9 | I (UV) | Average current in UV lamp | 0100 mV | 0185 mV | 0250 mV |
| 10 | I (Gene) | Optional ozone generator UV lamp current | _ | _ | _ |
| 11 | Sig. Mes. | UV measurement detector signal | 500 mV | 4000 mV | 4800 mV |
| 12 | Sig. Ref. | UV reference detector signal | 500 mV | 4500 mV | 4800 mV |
| 13 | Gen. T°C | Generator temperature (option) | 550 mV | 595 mV | 650 mV |
| 14 | O2 | Option | _ | _ | _ |
| 15 | Aux3 | Aux3 | _ | _ | _ |
| 16 | 2.5 V ref. | Check of the analog / digital converter | 2400 mV | 2500 mV | 2600 mV |