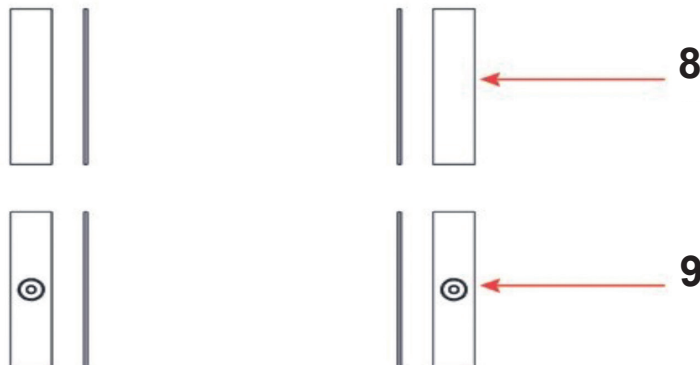
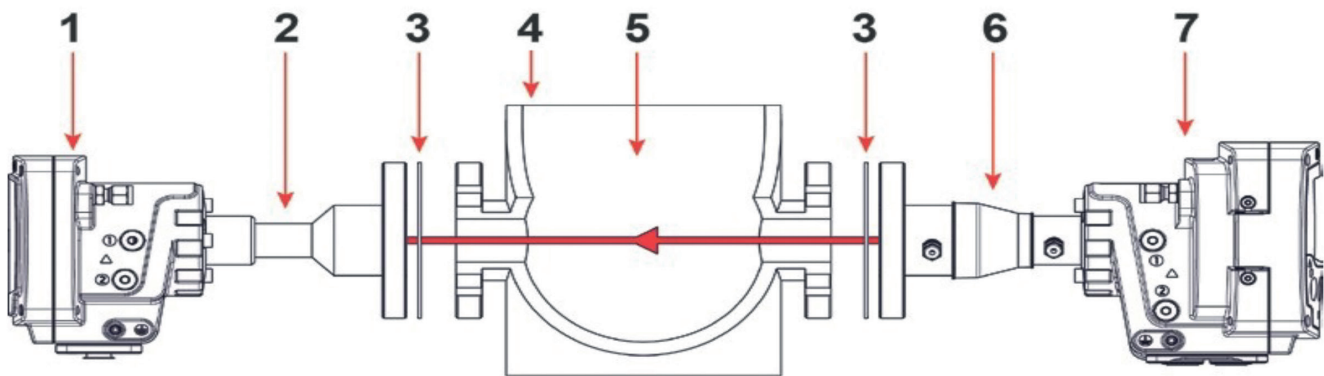


# SERVOTOUGH Laser 3 Plus

THE SERVOTOUGH LASER 3 PLUS IS CONFIGURED IN THREE PARTS. THE LASER ANALYZER ITSELF, STACK OR PIPE MOUNTING ACCESSORIES, AND ACCESSORIES RELATED TO UTILITIES. EACH PART IS FULLY DESCRIBED ON THE FOLLOWING PAGES.

| SERVOTOUGH LASER 3 PLUS   |         |                     |             |
|---------------------------|---------|---------------------|-------------|
| Analyzer Configuration    | 07931B1 | - - X X X X - - - - | see sheet 2 |
| Mounting Configuration    | 07931BM | - C - - - - - - - - | see sheet 3 |
| Accessories Configuration | 07931BA | - - - - - E - - - - | see sheet 4 |



- 1 Laser receiver
- 2 Fixed mount
- 3 Gasket
- 4 Process pipe, stack, duct, etc
- 5 Process gas
- 6 Adjustable mount (2 variants)
- 7 Laser transmitter
- 8 Thermal spacer
- 9 Isolation flange

**Note:** Installation may vary depending on specific application and system requirements as items 2 and 6 are interchangeable and items 8 and 9 are optional, additional gaskets and adaptors may be required.

# PRODUCT CONFIGURATION: Laser 3 Plus

| ANALYZER CONFIGURATION    |   |         |   |   |   |   |   |   |   |   |   |                        |                        |
|---------------------------|---|---------|---|---|---|---|---|---|---|---|---|------------------------|------------------------|
| ANALYZER TYPE             | OPTION  |         | - | - | X | X | X | X | - | - | - | -                      |                        |
| Measurement 1             | Process Oxygen  | 07931B1 | A |   |   |   |   |   |   |   |   |                        |                        |
|                           | Combustion Carbon Monoxide  | 07931B1 | C |   |   |   |   |   |   |   |   |                        |                        |
|                           | Ammonia   | 07931B1 | F |   |   |   |   |   |   |   |   |                        |                        |
|                           | Combustion Oxygen   | 07931B1 | G |   |   |   |   |   |   |   |   |                        |                        |
| Measurement 1, Range      | 0-15 ppm  |         |   | B |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-25 ppm  |         |   | C |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-50 ppm  |         |   | D |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-100 ppm   |         |   | E |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-200 ppm   |         |   | F |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-250 ppm   |         |   | G |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-500 ppm   |         |   | H |   |   |   |   |   |   |   |                        | NH <sub>3</sub>        |
|                           | 0-1000 ppm  |         |   | J |   |   |   |   |   |   |   |                        | NH <sub>3</sub> /CO    |
|                           | 0-2500 ppm  |         |   | K |   |   |   |   |   |   |   |                        | NH <sub>3</sub> /CO    |
|                           | 0-5000 ppm  |         |   | L |   |   |   |   |   |   |   |                        | NH <sub>3</sub> /CO    |
|                           | 0-10,000ppm   |         |   | M |   |   |   |   |   |   |   |                        | CO                     |
|                           | 0-20,000ppm   |         |   | N |   |   |   |   |   |   |   |                        | CO                     |
|                           | 0-50,000ppm   |         |   | O |   |   |   |   |   |   |   |                        | CO                     |
|                           | 0-1%  |         |   | R |   |   |   |   |   |   |   |                        | O <sub>2</sub> only    |
|                           | 0-5%  |         |   | S |   |   |   |   |   |   |   |                        | O <sub>2</sub> only    |
|                           | 0-10%   |         |   | T |   |   |   |   |   |   |   |                        | O <sub>2</sub> only    |
|                           | 0-21%   |         |   | U |   |   |   |   |   |   |   |                        | O <sub>2</sub> process |
| 0-25%                     |   |         | V |   |   |   |   |   |   |   |   | O <sub>2</sub> process |                        |
| 0-100% †                  |   |         | W |   |   |   |   |   |   |   |   | O <sub>2</sub> process |                        |
| Measurement 2             | Methane<br>(only with combustion carbon monoxide)                       |         |   |   | E |   |   |   |   |   |   |                        |                        |
| Measurement 2, Range      | 0-5%  |         |   |   |   | S |   |   |   |   |   |                        |                        |
| Reserved - Future Use     | Reserved - Future Use   |         |   |   |   |   | X |   |   |   |   |                        |                        |
| Reserved - Future Use     | Reserved - Future Use   |         |   |   |   |   |   | X |   |   |   |                        |                        |
| Area Classification       | Safe Area/General Purpose   |         |   |   |   |   |   |   | 1 |   |   |                        |                        |
|                           | ATEX GAS Category 3G/IECEx Zone 2                                       |         |   |   |   |   |   |   | 2 |   |   |                        |                        |
|                           | North American Class 1 Division 2                                       |         |   |   |   |   |   |   | 3 |   |   |                        |                        |
|                           | ATEX DUST Category 2D/IECEx Zone 1                                      |         |   |   |   |   |   |   | 4 |   |   |                        |                        |
| Path Length               | 0.1m to 2m *  |         |   |   |   |   |   |   |   | A |   |                        |                        |
|                           | >2m to 12m  |         |   |   |   |   |   |   |   | B |   |                        |                        |
|                           | >12m to 25m **  |         |   |   |   |   |   |   |   | C |   |                        |                        |
| Additional Inputs/Outputs | Not Required  |         |   |   |   |   |   |   |   |   | X |                        |                        |
|                           | Required - (additional 1 x mA output,<br>2 x 4-20 mA input, 2 x relays) |         |   |   |   |   |   |   |   |   |   | 1<br>2                 |                        |
| Process Pressure          | <1.5 BarA + <500°C (Standard)   |         |   |   |   |   |   |   |   |   |   |                        | A                      |
|                           | 1.5 BarA - 16 BarA and <500°C   |         |   |   |   |   |   |   |   |   |   |                        | B                      |
|                           | <1.5 BarA + >500°C  |         |   |   |   |   |   |   |   |   |   |                        | D                      |
|                           | 1.5 BarA -16 BarA and >500°C  |         |   |   |   |   |   |   |   |   |   |                        | E                      |

† Non-Flammable Samples Only

\* For Shorter Path Length Consult Servomex

\*\* For Longer Path Length Consult Servomex

# PRODUCT CONFIGURATION: Laser 3 Plus

| MOUNTING CONFIGURATION           |   |                  |   |                            |        |                            |        |                  |                                 |        |
|----------------------------------|---|------------------|---|----------------------------|--------|----------------------------|--------|------------------|---------------------------------|--------|
| MOUNTING TYPE                    | OPTION  | 0793IAM          | - | C                          | -      | -                          | -      | -                | -                               | -      |
| Isolation Flange                 | Not Required<br>Customer Supplied<br>DN50 (pair)<br>2" ANSI (pair)  | X<br>C<br>B<br>M |   |                            |        |                            |        |                  |                                 |        |
| Tx Mounting Type                 | Adjustable*   |                  | C |                            |        |                            |        |                  |                                 |        |
| Tx Flange Size                   | DN25 (PN10)<br>DN50 (PN10)<br>1" ANSI (150)<br>2" ANSI (150)<br>3" ANSI (150)<br>4" ANSI (150)                            |                  |   | A<br>B<br>L<br>M<br>N<br>O |        |                            |        |                  |                                 |        |
| Rx Mounting Type                 | Fixed <1m<br>Adjustable   |                  |   |                            | A<br>C |                            |        |                  |                                 |        |
| Rx Flange Size                   | DN25 (PN10)<br>DN50 (PN10)<br>1" ANSI (150)<br>2" ANSI (150)<br>3" ANSI (150)<br>4" ANSI (150)                            |                  |   |                            |        | A<br>B<br>L<br>M<br>N<br>O |        |                  |                                 |        |
| Seal Material<br>(Sample Wetted) | Fluorocarbon Viton 70<br>Solvent Resistent (Chemraz 505)  |                  |   |                            |        |                            | 2<br>3 |                  |                                 |        |
| Insertion Tubes                  | Not Required<br>2" ANSI 316SS Narrow Bore (pair)<br>2" ANSI 316SS Standard Bore (pair)<br>DN50 316SS Standard Bore (pair) |                  |   |                            |        |                            |        | X<br>3<br>4<br>5 |                                 |        |
| Thermal Break                    | Not Required<br>DN25 (pair)<br>DN50 (pair)<br>1" ANSI (pair)<br>2" ANSI (pair)<br>3" ANSI (pair)<br>4" ANSI (pair)        |                  |   |                            |        |                            |        |                  | X<br>A<br>B<br>L<br>M<br>N<br>O |        |
| In Line Span Cell<br>(100mm)     | Not Required<br>Required  |                  |   |                            |        |                            |        |                  |                                 | X<br>1 |

\* For path lengths < 1m refer to Servomex

**ACCESSORIES CONFIGURATION**

| ANALYZER PURGE   | OPTION   | 0793IAA     | -           | -           | - | -           | -                                    | -       | E | -      | -                | -                     | - | -  |
|--|--|-------------|-------------|-------------|---|-------------|--------------------------------------|---------|---|--------|------------------|-----------------------|---|--|
| Window Purge   | None<br>Instrument Air<br>Nitrogen   | O<br>A<br>N |             |             |   |             |                                      |         |   |        |                  |                       |   |  |
| Measurement Purge  | Blanked<br>Instrument Air<br>Nitrogen  |             | O<br>A<br>N |             |   |             |                                      |         |   |        |                  |                       |   |  |
| Environmental Purge  | None<br>Instrument Air<br>Nitrogen   |             |             | O<br>A<br>N |   |             |                                      |         |   |        |                  |                       |   |  |
| Purge Adapter Kits   | None (1/8" Compression)<br>Metric (6mm Compression Fittings)<br>Imperial (1/4" Compression Fittings)   |             |             |             |   | O<br>M<br>I |                                      |         |   |        |                  |                       |   |  |
| Purge Panel  | Not Required<br>Window Purge Only<br>Window Purge plus Cal Cell<br>Window and case Purge<br>Window and case Purge plus Cal Cell<br>Purge Windows, Case, Laser and Detector<br>Purge Windows, Case, Laser and Detector plus cal cell (Full Purge)<br>Full purge plus isolation flange purge |             |             |             |   |             | C<br>1<br>2<br>3<br>4<br>5<br>6<br>7 |         |   |        |                  |                       |   |  |
| Power  | 24 V dc (Standard)<br>100-240 V / 50-60 Hz External Power Supply   |             |             |             |   |             |                                      | D<br>M* |   |        |                  |                       |   |  |
| Manuals: User / Installation / Safety                        | English  |             |             |             |   |             |                                      |         | E |        |                  |                       |   |  |
| Manuals: Service   | Not Required<br>English  |             |             |             |   |             |                                      |         |   | X<br>E |                  |                       |   |  |
| Alignment Tool   | Not Required<br>Short pathlength (<5m)<br>Long pathlength (>5m)<br>Combined (long & short)   |             |             |             |   |             |                                      |         |   |        | X<br>A<br>B<br>C |                       |   |  |
| Calibration Cell Kit (inc cell, cable, stand, process blank) | Not Required<br>250 mm<br>500 mm<br>750 mm<br>1000 mm  |             |             |             |   |             |                                      |         |   |        |                  | 0<br>2<br>3<br>4<br>5 |   |  |
| InterConnection Cable  | Customer Own Supply<br>Servomex Standard   |             |             |             |   |             |                                      |         |   |        |                  |                       |   | C<br>S   |
| Interconnection Cable length                                 | Not Required<br>5M Interconnection cable<br>10M Interconnection cable<br>15M Interconnection cable<br>20M Interconnection cable<br>25M Interconnection cable<br>30M Interconnection cable<br>40M Interconnection cable<br>50M Interconnection cable  |             |             |             |   |             |                                      |         |   |        |                  |                       |   | 0<br>5<br>10<br>15<br>20<br>25<br>30<br>40<br>50 |

PBLaser 3 Plus Mini Rev0 Date:03/17

\*NOT AVAILABLE FOR ATEX DUST HAZARDOUS AREA