OpredoX™ Analyzers

Probe Type Tunable Diode Laser Spectrometer
TDLS8100
The best just got better
Yokogawa’s new probe type TDLS greatly reduces installation costs.

- Single flange design allow for installation flexibility
- Intuitive touch-screen HMI
- Fully field repairable with 50 days of data and spectra storage
- Hazardous area classification Division 1, Zone 1; explosion proof/flame-proof type; FM (US, Canada), ATEX, IECEx, EAC
- SIL 2 Certified

**System Configuration**

- **Standard system configuration**
  - LCD display for process parameters and system status
  - HART communication available

- **System configuration with HMI**
  - Connect up to 4 units simultaneously
  - Ability to connect to TDLS8000 and TDLS8100

**Easy Installation & Replacement**

- **Reduced installation & maintenance costs**
  - Single flange design reduces installation costs
  - No routine calibration required
Fired heater combustion, safety, and lifecycle management

Yokogawa’s TDLS8100 provides near real time O₂ and CO/CH₄ measurements to achieve:
- Combustion Efficiency Improvement
- Safety Improvement
- Longer Life time of the coils and coil hangers
- Higher throughput through optimized heating

Limiting O₂ concentration for safety and process monitoring & control

Yokogawa’s TDLS8100 O₂ analyzer achieves:
- Reduced maintenance by removing the need for sample extraction
- Near real time measurements (<5 seconds)
- Interference free analysis (TruePeak measurement technology)

High Reliability

- **Interference free**
  - Interference free auto-gain ensures wide signal ranges to maintain measurements during dynamic process events

- **Reference cell**
  - Internal reference cell in the laser module ensures peak locking to maintain reliable measurements

- **TruePeak Spectra**
  - Yokogawa’s TruePeak can measure the area of the absorbance peak. This eliminates effects from changing background gases, allowing for simple pressure and temperature compensation.

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TruePeak Spectra
(10% O₂ in different background gases)

Traditional TDL Spectra
(10% O₂ in different background gases)
## TDLS8100

### STANDARD SPECIFICATIONS

**Measurement object**: O₂, CO, CO and CH₄.

**Measurement system**: Tunable diode laser spectroscopy.

<table>
<thead>
<tr>
<th>Measured component</th>
<th>Min. range</th>
<th>Max. range</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂</td>
<td>0-1%</td>
<td>0-25%</td>
</tr>
<tr>
<td>CO (ppm)</td>
<td>0-200 ppm</td>
<td>0-10000 ppm</td>
</tr>
<tr>
<td>CO and CH₄</td>
<td>0-200 ppm</td>
<td>0-10000 ppm</td>
</tr>
<tr>
<td>CH₄</td>
<td>0-5%</td>
<td></td>
</tr>
</tbody>
</table>

**Probe length**: 0.7 m, 1.0 m, 1.5 m, 2.0 m

**Optical path length**: 1 m

**Probes**
- 2 points, 4 to 20 mA DC
- Output types: Gas concentration, Transmission, Process gas temperature, Process gas pressure

**Digital communication**
- HART, Ethernet

**Digital output**
- 2 points, contact rating 24 V DC
- Output function: Activate during Warning / Calibration / Validation / Warm up / Maintenance conditions
- Fault function: Activate during Fault condition or when the system power is off

**Power supply**: 24 V DC ±10%

**Protection degree**
- IP66/NEMA 4X
- Division 1, Zone 1: Flameproof FM (US, Canada), IECEx

**Hazardous area classifications**
- Division 1, Zone 1: Explosion-proof/flame-proof type
- FM (US, Canada), ATEX, IECEx, EAC
- SIL 2 Certified

**Process gas condition**
- Process gas temperature: Max 600°C
- Process gas pressure: 90 to 500 kPa abs.
- Process gas flow velocity: 1 to 30 m/sec

**Installation condition**
- Ambient operating temperature: -20 to +55°C
- Storage temperature: -30 to +70°C
- Humidity: 0 to 90%RH at 40°C (non-condensing)

**YH8000**

- **Display**: Touchscreen 7.5 inch TFT color LCD panel, 640 x 480 (VGA)
- **Communication**: Ethernet: RJ-45 connector, Communication speed; 100 Mbps
- **Protection degree of enclosure**: IP65, NEMA Type 4X
- **Weight**: Approx. 4 kg
- **Mounting**: Analyzer mount (Front, left-side, right-side) with tilting function, Pipe mount or Panel mount
- **Cable Entries**: 1/2NPT or M20 x 1.5 mm, two holes
- **Installation conditions**: Ambient operating temperature: -20 to +55°C
- **Humidity**: 0 to 90%RH at 40°C (Non-condensing)
- **Power supply**: 24 V DC ±10%
- **Hazardous area classifications**: Division 1, Zone 1: Explosion-proof/flame-proof type

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OpreX™ Yokogawa achieves operational excellence by providing products, services, and solutions based on the OpreX comprehensive brand that cover everything from business management to operations.

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