How dependable is your toxic gas leak detection system?

ATI's Series F12/D provides a high level of confidence that your system is functional at all times. Our Auto-Test feature provides an actual gas "bump test" every 24 hours, verifying system integrity. Not an electronic test of some kind but a true test of sensor response to gas.
MODEL F12/D TOXIC GAS DETECTOR

- **Power:** Available in 12-24 VDC, 115 VAC, or 230 VAC configurations
- **Interchangeable Sensors:** The F12/D accommodates 60 different sensor modules
- **Sensor Verification:** Auto-Test generator option provides a true gas response test. Test history is stored in sensor memory for user review at any time
- **LCD Graphic Display:** Allows clear gas concentration display plus complete menu-driven operator interface
- **Heated Sensor Option:** A heated sensor holder allows operation in high humidity to avoid condensation problems
- **Remote Sensor:** A junction box with digital output allows sensor location up to 500 ft. from the F12/D display unit
- **Internal Data Logger:** Gas values are stored at user defined intervals from 1 to 60 minutes. Stored data may be reviewed or graphed on the LCD display
- **Calibration History:** Sensor calibration adjustments of zero and span are stored in sensor memory and may be viewed on the F12/D display
- **Communication:** F12/D is available with either HART® or Modbus RTU
- **Approvals:** CE and RoHS Compliant

FLOWCELL AND CALIBRATION ADAPTERS

Calibration adapters slide into the sensor holder for easy connection of calibration gas. A flowcell assembly is also available where pumped sampling systems are used.

INSTALLATION OPTIONS

The sensor holder in the F12/D is normally mounted to the transmitter enclosure. For applications where this configuration is not ideal, there are a number of different configurations for meeting specific requirements. These include a 6 ft. (1.9 m) cable extension, a remote junction box for longer sensor separation distances, and a duct mount sensor.

An accessory device called a “sensor keeper” is available for storing standby spares. The keeper provides sensor bias circuitry that maintains spare sensors in a ready-to-use state without the need for stabilization time.
SMART SENSORS

The F12/D uses ATI smart sensors that allow easy interchangeability. Each sensor contains signal conditioning electronics and data memory. Sensors can be calibrated using a spare unit in the shop to avoid using calibration gases in the plant. Sensors may also be returned to ATI for factory calibration, which is useful for gases that are costly or difficult to obtain. Each sensor adjustment (zero or span) is stored in sensor memory and can be reviewed on the F12/D display. This data is very useful in assessing the sensor's condition and estimating remaining sensor life.

AVAILABLE SENSORS

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Gas</th>
<th>Generator</th>
</tr>
</thead>
<tbody>
<tr>
<td>00-1000*</td>
<td>Br₂, 0-1/5 ppm (00-1538)</td>
<td>00-1538 E18-11 Chlorine gas generator</td>
</tr>
<tr>
<td>00-1001*</td>
<td>Br₂, 0-5/200 ppm (00-1538, 20 max.)</td>
<td>00-1539 E18-15 Ammonia gas generator</td>
</tr>
<tr>
<td>00-1002*</td>
<td>Cl₂, 0-1/5 ppm (00-1538)</td>
<td>00-1540 E18-16 Carbon Monoxide gas generator</td>
</tr>
<tr>
<td>00-1003*</td>
<td>Cl₂, 0-5/200 ppm (00-1538, 20 max.)</td>
<td>00-1541 E18-24 Hydrogen Sulfide gas generator</td>
</tr>
<tr>
<td>00-1004*</td>
<td>ClO₂, 0-1/5 ppm (00-1538)</td>
<td>00-1542 E18-27 Sulfur Dioxide gas generator</td>
</tr>
<tr>
<td>00-1005*</td>
<td>ClO₂, 0-5/200 ppm (00-1538, 20 max.)</td>
<td>00-1611 E18-22 HCN gas generator</td>
</tr>
<tr>
<td>00-1359</td>
<td>ClO₂, 200/1000 ppm</td>
<td>00-1538 E18-11 Chlorine gas generator</td>
</tr>
<tr>
<td>00-1425*</td>
<td>F₂, 0-1/5 ppm (low Cl₂) (00-1538)</td>
<td>00-1539 E18-15 Ammonia gas generator</td>
</tr>
<tr>
<td>00-1006*</td>
<td>F₂, 0-5/200 ppm (00-1538, 20 max.)</td>
<td>00-1540 E18-16 Carbon Monoxide gas generator</td>
</tr>
<tr>
<td>00-1007*</td>
<td>F₂, 0-50/500 ppm (00-1538, 20 max.)</td>
<td>00-1541 E18-24 Hydrogen Sulfide gas generator</td>
</tr>
<tr>
<td>00-1008*</td>
<td>O₃, 0-5/200 ppm (00-1538, 20 max.)</td>
<td>00-1542 E18-27 Sulfur Dioxide gas generator</td>
</tr>
<tr>
<td>00-1358</td>
<td>O₃, 200/1000 ppm</td>
<td>00-1538 E18-11 Chlorine gas generator</td>
</tr>
<tr>
<td>00-1163</td>
<td>O₃, 500/2000 ppb (00-1538)</td>
<td>00-1539 E18-15 Ammonia gas generator</td>
</tr>
<tr>
<td>00-1010*</td>
<td>NH₃, 0-50/500 ppm (00-1539, 100 max.)</td>
<td>00-1540 E18-16 Carbon Monoxide gas generator</td>
</tr>
<tr>
<td>00-1011</td>
<td>NH₃, 0-500/2000 ppm</td>
<td>00-1541 E18-24 Hydrogen Sulfide gas generator</td>
</tr>
<tr>
<td>00-1012*</td>
<td>CO, 0-50/1000 ppm (00-1540, 100 max.)</td>
<td>00-1542 E18-27 Sulfur Dioxide gas generator</td>
</tr>
<tr>
<td>00-1013</td>
<td>H₂O, 0-1/10%</td>
<td>00-1543 E18-11 Chlorine gas generator</td>
</tr>
<tr>
<td>00-1014</td>
<td>H₂O, 0-5/25%</td>
<td>00-1539 E18-15 Ammonia gas generator</td>
</tr>
<tr>
<td>00-1015</td>
<td>CO₂, 0-1/5 ppm</td>
<td>00-1540 E18-16 Carbon Monoxide gas generator</td>
</tr>
<tr>
<td>00-1016</td>
<td>CO₂, 0-5/100 ppm</td>
<td>00-1541 E18-24 Hydrogen Sulfide gas generator</td>
</tr>
<tr>
<td>00-1017*</td>
<td>HCl, 0-10/200 ppm (00-1541, 20 max.)</td>
<td>00-1542 E18-27 Sulfur Dioxide gas generator</td>
</tr>
<tr>
<td>00-1018*</td>
<td>HCN, 0-10/200 ppm (00-1611, 20 max.)</td>
<td>00-1611 E18-22 HCN gas generator</td>
</tr>
<tr>
<td>00-1019*</td>
<td>HF, 0-10/200 ppm (00-1538, 20 max.)</td>
<td>00-1539 E18-15 Ammonia gas generator</td>
</tr>
<tr>
<td>00-1020*</td>
<td>H₂S, 0-10/200 ppm (00-1541, 100 max.)</td>
<td>00-1540 E18-16 Carbon Monoxide gas generator</td>
</tr>
<tr>
<td>00-1469</td>
<td>H₂S, 200/1000 ppm</td>
<td>00-1541 E18-24 Hydrogen Sulfide gas generator</td>
</tr>
<tr>
<td>00-1021</td>
<td>NO, 0-50/500 ppm</td>
<td>00-1542 E18-27 Sulfur Dioxide gas generator</td>
</tr>
<tr>
<td>00-1022*</td>
<td>NO₂, 0-10/200 ppm (00-1538, 20 max.)</td>
<td>00-1543 E18-11 Chlorine gas generator</td>
</tr>
<tr>
<td>00-1023*</td>
<td>NO₃, 0-10/500 ppm (00-1542, 20 max.)</td>
<td>00-1544 E18-16 Carbon Monoxide gas generator</td>
</tr>
</tbody>
</table>

Notes: XXX for each sensor indicates minimum and maximum ranges for that sensor. * indicates availability of Auto-Test. Generator part number shown in ( ). Auto-Test not available for ranges above indicated maximum.
ORDERING INFORMATION
MODEL F12/D - A-B-C-D
F12/D transmitters are designed to use electrochemical sensors only. Specify transmitter and then select sensors from page 3. Add the Auto-Test generator if that feature is desired.

SUFFIX A - POWER
2 - 24 VDC, 4-20 mA & RS-232/485 outputs only
3 - 115 VAC, 50/60 Hz, 4-20 mA, RS-232/485, & relay outputs
4 - 230 VAC, 50/60 Hz, 4-20 mA, RS-232/485, & relay outputs
5 - 12-30 VDC, 4-20 mA, RS-232/485, & relay outputs

SUFFIX B - SENSOR HOLDER STYLE
1 - Integral sensor holder
2 - Remote sensor holder with junction box (order 31-0185 interconnect cable below)
3 - Integral heated sensor holder
4 - Remote heated sensor holder with junction box (order 31-0068 interconnect cable below)
5 - Duct mount sensor holder with 25 ft. extension cable (requires 00-1388 Adapter)
6 - Sensor holder with 6 ft. cable
7 - Remote junction box plus 6 ft. cable with holder
8 - Remote junction box with close-coupled duct mount sensor (requires 00-1388 Adapter)
9 - Heated sensor holder with 6 ft. cable.

SUFFIX C - SENSOR AUTO-TEST
1 - No Auto-Test Generator Holder
2 - With Auto-Test Generator Holder

SUFFIX D - DIGITAL OUTPUT
1 - None
2 - HART® interface
3 - Modbus interface

ACCESSORIES
00-1056 Calibration adapter
00-1251 Flowcell assembly
03-0118 Flowcell with 03-0460 sensor cap
00-0981 Sensing module keeper for 4 sensors
00-1388 Duct sensor adapter, 1½” MNPT
31-0185 4-Conductor Interconnect Cable, specify length, max. 500 ft.
31-0068 6-Conductor Interconnect Cable, specify length, max. 500 ft.
05-0094 Panel mount bracket kit

Note: When ordering an F12/D unit with a flowcell, the 03-0460 sensor cap will be supplied in place of the standard sensor cap and does not need to be ordered separately. If a flowcell is being added to an existing F12/D, order the 03-0118 assembly which includes both the flowcell and sensor cap.

SPECIFICATIONS
Sensor Type Electrochemical cell
Gas Type Select sensor from listing on page 3
Range User adjustable within limits of selected sensor
Response Time Sensor dependent
Accuracy Generally ±5-10% of value, limited by available calibration gas accuracy.
Repeatability ±1% (Electronic)
Linearity ±0.5% (Electronic)
Zero Drift Less than 2% full scale per month, non-cumulative
Span Drift Dependent on sensor environment but generally less than 3% per month
Analog Output 4-20 mA, 600 ohms max. at 24 VDC
Serial Interface (Optional) HART® digital signaling over the 4-20mA current loop
(Optional) Modbus RTU over RS232/485
Power Requirements DC/RS-485: 24-30 VDC, 100 mA max.
115 VAC (±15%), 50-60 Hz, 6 VA max.
230 VAC (±15%), 50-60 Hz, 6 VA max.
12-30 VDC (with relays): 250 mA max.
Enclosure IP 65, polycarbonate with stainless steel hardware. Weatherproof and corrosion resistant. Refer to F12/D Support Drawings for Dimensions
CE Mark 2014/35/EU – Low voltage directive
2014/30/EU – Electromagnetic compatibility
Mounting (Standard) Wall or pipe mount bracket. U-Bolts suitable for 1.5” or 2” I.D.
(Optional) Panel mount kit available.
Auto-Test Option Dependent on sensor gas type and full scale range
Display 96x32 Dot-matrix Graphic LCD, Backlit, Transflective
Controls Four, dome-type push buttons; Remote alarm reset input (with optional alarm relays only)
Temperature -30°C to +60°C (Min. temp. for O₂ Sensor is -20°C)
Environment 10 to 95% RH (non-condensing)
Weight 1.5 lb (0.68 kg)

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