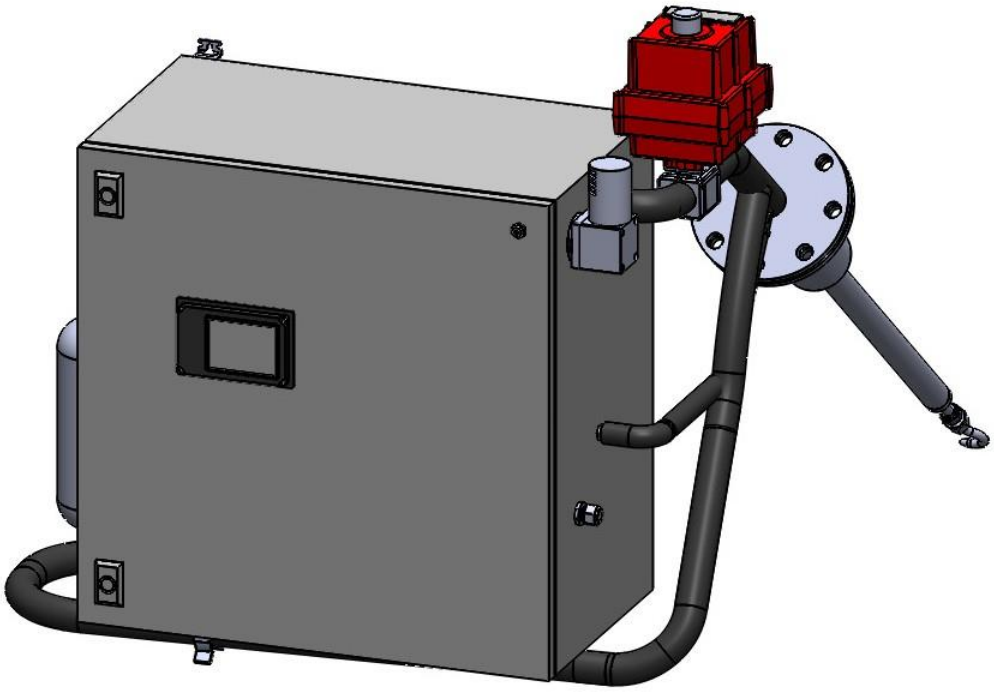
MARVILON

# All-in-one dust, moisture and gas composition measurement for dry/wet processes - MARV Ex IR



WWW MARVILON

MARVILON LLC
Kyiv city, Ukraine
+380 50 1680880
tovmarvilon@gmail.com
https://www.marv2ex.com

MARVILON
WE CAN MEASURE YOUR PROCESS

# Description of the MARV EX IR system

## All-in-one Extractive, Isokinetic and Temperature controlled continuous measurement for any processes

The system is designed to continuously measure concentration of the dust particles, moisture and gas composition inside industrial stacks. It is an ideal solution for gas process concentration monitoring in dry/wet conditions.

MARV EX IR dust monitor is using special configuration:

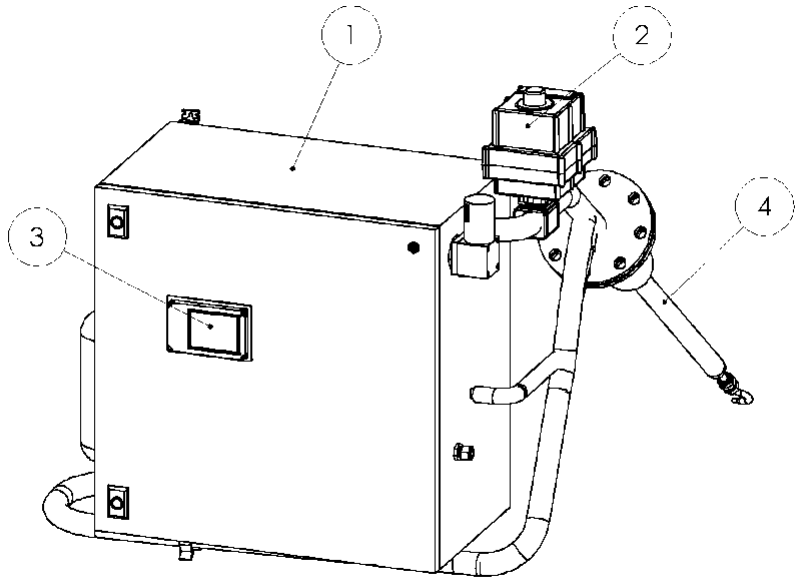
- heated sampling probe,
- an air/N2 purged optical sensor module,
- and an integrated PLC, which are housed in a weather-proof powder coated steel enclosure.

In a complete installation the probe is inserted inside a stack perpendicular to the process flow using a flange. An internal sample pump ejects at the end of the sampling line and draws flue gas through the internal piping of the device and ejects it back into the stack.

During operation, the probe continuously extracts a gas sample, which is heated continuously to vaporize any moisture. Dried sample gas is directed through the measurement chamber of the optical sensor module.

Inside the module there are two sensors for consecutive measurement of dust in visible range and gas composition and moisture in the infrared range. The underlying methods are called “optical forward scattering” for dust measuremnt and “infrared absorption” for moisture and gas composition measurement.

# System description




| | | | |
|---|---|---|---|
| ① | Analyzer enclosure | ③ | Panel PLC (optional) |
| ② | Sample return | ④ | Sample gas probe |

MARVILON

# Specification

| General information: | |
|---|---|
| **Product name:** | MARV Ex IR |
| **Measured objects:** | Total suspended particles (TSP), moisture, CO/CO2/CH4/etc. |
| **Measurement principle:** | Optical forward scattering and Infrared absorption |
| **Measurement range:** | Dust - up to 300 mg/m3<br>Moisture – up to 40%<br>CO – up to 70%<br>CO2 – up to 30%<br>CH4 – up to 10%<br>Other gases - on request |
| **Power consumption:** | 230 V AC / 16 A, 50 Hz |

| Input/output signals: | |
|---|---|
| **Input signals:** | 4-20 mA input (process pressure, temperature, velocity, spare) |
| **Output signals:** | Digital output, 24 V DC / 0.5 A (common alarm)<br>Isolated active 4 ... 20 mA output loop (concentrations)<br>Ethernet TCP/IP for remote control, USB for data logging |

| Physical properties: | |
|---|---|
| **Enclosure:** | 600 x 600 x 300 mm (HxWxD), powder coated steel, IP65 |
| **Probe length:** | Approx. 1 m (3.28 ft) (depends on application) |
| **Probe material:** | Stainless steel (316L), Hastelloy, etc. |

| Process conditions: | |
|---|---|
| **Max. temperature:** | 200 °C |
| **Process gas speed:** | 5 ... 35 m/s |
| **Pressure:** | depends on application |

| Ambient conditions | |
|---|---|
| **Ambient temperature:** | -40 ... 60 °C |

| Options: | |
|---|---|
| **Sampling:** | Automated isokinetic sampling with sample flow regulation |
| **Calibration:** | Manual or automated |
| **Extractive sampling (QAL3):** | Module for system calibration according to EN13284-2 |

MARVILON LLC
Kyiv city, Ukraine
+380 50 1680880
tovmarvilon@gmail.com
https://www.marv2ex.com

MARVILON
WE CAN MEASURE YOUR PROCESS