

TEKTRAN 3400 SPECIFICATIONS (Rev 1.00)

Enclosure:

Dimension (WDH): 36" – 24" – 72" (91 – 61 – 183 cm)
Weight: 1000 lbs (454 kg)
Protection: IP 40 (indoor version)
IP 56 (outdoor version)

Environmental:

Operating Temp: 59 – 95 °F (15 - 35 °C)
Humidity: 20 - 90% RH (non-condensing)

Electrical Requirements:

Three dedicated 20 Amp, 230 VAC circuits for the entire system.

AC7: System cab 2.5 kW(start-up); 1.5 kW(steady state)
AC5: Probe & Stinger 505 W+600 W = 1005 W
AC 1: Heated Line ~100 W/m up to 4kW max

Air Supply Requirements:

Pressure: 90 - 180 psi (621 – 1241 kPa)
Air Consumption
Operation: ~1.1 ft³/min (30 L/min) consumption, 24/7
Calibration: ~1.4 ft³/min (40 L/min), 1-2 times daily (~30 min per event)
Blowback: ~4.2 ft³/min (120 L/min), every 1-2 hr for 5-15 s
Air Quality: Oil and particulate free, max dew point -40 ° F (-40° C) required.

Argon Supply Requirements:

Storage for 2 (minimum) Argon bottles (size T or K). One on-line, one spare must be provided. High-quality dual-stage regulator plumbed to 3400 cabinet.
Delivery Pressure: ~ 50 psi. (345 kPa)
Argon Usage: ~ 0.35 ft³/h (10 L/h), 24/7. (Regulators not provided)

Water Supply Requirements:

Tekran Water Recirculating system eliminates constant consumption and only need servicing (water exchange) every 90 days.

Water Drain Requirements:

System service is required once every 90 days with recirculation system.

Exhaust Vent Requirements:

Waste Gas Ports: ¼" and 3/8" (6.3 mm and 9.5 mm), must be vented outside shelter.
Exhaust Volume: ~ 1 ft³/min (30 L/min) with occasional 1.4 ft³/min (40 L/min) intervals

Measuring Data Output:

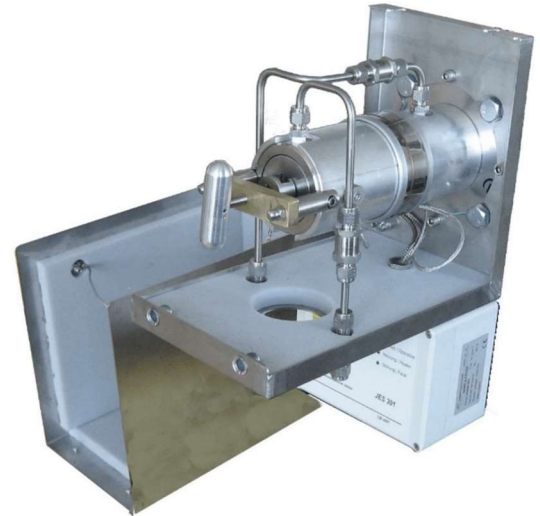
Analog Output: Two 4-20 mA channels
Ethernet Output: Optional use



TEKRAM 3400 PROBE SPECIFICATIONS (Rev 1.00)

Operational Data:

Filter Element:	PTFE Teflon, (2 PTFE Filter element 2 PTFE support disc 1 PTFE support shell)
Filter Surface:	120 in ² (170 cm ²)
Operating Pres:	Max. 29 psi (200 kPa) abs.
Flow Rate (max):	21 ft ³ /h (600 L/h), depends on application
Wetted Parts:	SS316L, SiC; Viton®
Temp Range:	41 – 392 °F (5 - 200 °C)
Factory Defaults:	356 °F (180 °C)
Heat-up Time:	< 1 h
Amb Temp Range:	-4 – 149 °F (-20 - 65 °C)
Back Purge Flow:	3180 ft ³ /h (90 m ³ /h) @ 4 bar, 5650 ft ³ /h (160 m ³ /h) @ 7 bar
Back Purge Air:	Instrument air according to ISO 8573-1 Class 1.2.1
Protection Class:	Electronic - IP65, Probe - IP43
Area Classification:	For use in safe, non-hazardous area only



Dilution Unit:

Dilution Ratio:	1:30
Supply Pressure:	65 psi (450 kPa)
Back Pres (max):	< 0.7 psi (5 kPa)
Dilution Gas:	Instrument air or inert gas (e.g. Grade 5.0 Nitrogen)

Air Accumulator:

Volume:	0.07 ft ³ (2 L)
Operating Pres:	14 – 250 psi (95 – 1700 kPa)
Ambient Temp:	14 – 212 °F (-10 - 100 °C)
Material:	SS304
Supply Connection:	½ " (12.7 mm) female thread

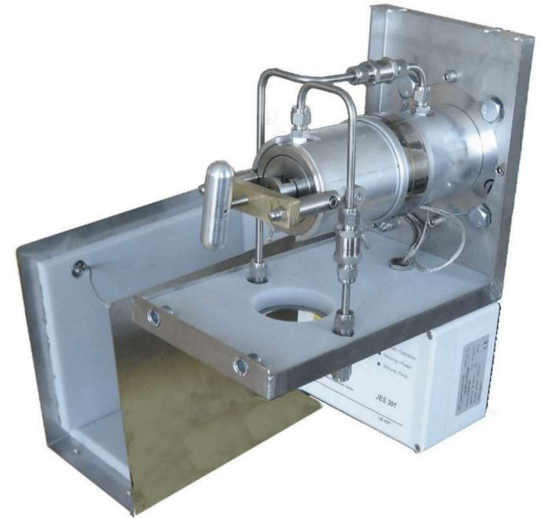
Construction:

Dimension WHD:	15.4" x 20.9" x 11.8" (390 x 530 x 300 mm)
Junction Box WHD:	4.7" x 6.3" x 3.9" (120 x 160 x 100 mm)
Dead Volume:	11 in ³ (177 mL)
Mounting Flange:	DN65, PN6, form A according to EN 1092-1; SS316
Mounting Angle:	range 5° to 10° with respect to the horizontal, sloping down
Mounting Position:	Torsion angle max. 10°
Weight:	Approx. 34 .2 lbs (15.5 kg)
Housing Material:	SS304, stainless steel
Sample Gas Inlet:	3/4" (19 mm) female thread

TEKRAN 3400 PROBE SPECIFICATIONS (Continued)

Construction (Continued):

Samp & Dil. Outlet:	3/8" (9.5 mm) NPT
Calibration Port:	1/4" (6.3 mm) NPT
Dilution Inlet:	1/4" (6.3 mm) NPT
Wetted Material:	SS316L, FPM, glass
Back Purge Air:	Max. 53 ft ³ /min (1500 L/min) respectively, max. 16 ft ³ /cycle (450 L/cycle) @ 101 psi (700 kPa) inlet pressure
Temp Sensor:	RTD (Pt100)
Heater Element:	500 W



Electrical:

Power Usage:	~ 505 W
Valve Back Purge:	24 VDC 10 W
Power Supply:	230 VAC / 50 Hz +/- 10 %
Elec Connection:	Spring-type terminal; clamping range 0.00012 – 0.0039 in ² (0.08 - 2.5 mm ²)
Approval / Sign:	CE

3400 STINGER SPECIFICATIONS (Rev 1.00)

Operation:

Operating Temp: Max 392 °F (200 °C)
Ambient Temp: -4 – 140 °F (-20 - 60 °C)
Operating Pres: Max 101 psi (700 kPa)
Mounting Position: 5° to 15° incline (recommended)
Samp Gas Temp: Max 392 °F (200 °C)
Heating-Up Time: < 1 h



Construction:

Diameter Int/Ext: 0.84" / 1.77" (21.3 mm / 45 mm)
Available Lengths: 19.7 / 23.6 / 27.6 / 29.5 / 39.4 / 45.3 / 47.2 / 59.1 / 78.7 in
50 / 60 / 70 / 75 / 100 / 115 / 120 / 150 / 200 cm
DN65/PN6 acc. EN 1092-1 form A or 2" or 3" (5.1 or 7.6 cm) ANSI 150 lbs (68 kg), ASME B16.5
Wetted Material: SS316L
Protection Class: IP65 (EN60529)
Approvals / Signs: CE

Electrical:

Power Supply: 230 VAC 50/60 Hz or 115 VAC 50/60 Hz
Power Usage: ~ 450 to 1800 W (depending on sampling pipe length)

3400 Utility Requirements (Rev 1.00)

Instrument Rack Foot Print:

36" x 24" x 72" (91 x 61 x 183 cm) WDH

Clearance in back of rack – 3' (91 cm) per NEC

Clearance in front of rack – 3' (91 cm) for personnel access

Clearance to the sides of the rack – 2' (61 cm) required on each side for proper ventilation and service.

Weight max 1000lbs (454 kg) - No AC system

Environmental Conditions:

The analytical portion of the system must reside in an area suitable for human occupancy.

Must be relatively vibration free

Climate controls for 59 – 95 °F (15 - 35 °C) with non-condensing humidity conditions must be provided.

Humidity: 20 to 90 % RH (non-condensing)

The temperature and humidity requirements may be met by the use of an optional climate controlled cabinet available from Tekran



Electrical Requirements:

Three dedicated 20 Amp, 230 VAC circuits for entire system. 60HZ. Voltage tolerance -5% to 10%.

AC7: System cabinet 2.5kW (start-up conditions); 1.5kW (steady state conditions).

AC5: JCT Probe/Stinger ~505 W + 600 W = 1005 W.

AC1: JCT Heated Line Zone 1 ~ 100 W per meter, up to 4 kW max.

AC2: JCT Heated Line Zone 2 (optional) ~ 100 W per meter, up to 4 kW max.

Total electrical load at start-up conditions - ~6.5 KW

All receptacles should be within 6 feet (1.8 m) of the rear of the CEM instrumentation.

Zero Air Supply Requirements:

Connection: 3/8" (9.5 mm) Brass compression fitting

Pressure: 90-180 psi (621 – 1241 kPa)

Volume

- Normal operation: 1.1 ft³/m (30 L/m) consumption, 24/7
- In calibration: 1.4 ft³/min (40 L/min) for approximately 30 minutes typically once or twice a day.
- During blowback: 4.2 ft³/min (120 L/min) for 5-15 seconds during blowback accumulator recharge once every one or two hours.

Zero air quality: oil and particulate free air with a maximum dew point of -40 °F (-40°C) required. Mercury concentration < 5 ng/m³. Zero air connection is 3/8" (9.5 mm) OD compression fitting.

3400 Utility Requirements (Continued)

Argon Supply Requirements:

Grade 4.8 (99.998%) or higher argon. (Also called Pre-Purified or UHP grade)

Storage for 2 (minimum) Argon bottles (size T or K) (one on line, one spare) must be provided.

Analyzer delivery pressure is approximately 50 psi (345 kPa).

Argon consumption is approximately 0.35 ft³/h (10 L/h), 24/7.

Provide single stage, high purity brass or stainless steel regulator with secondary pressure of 0-100 psi (0 – 690 kPa). Inlet fitting: CGA-580 to fit argon cylinder. Outlet fitting: 1/8" (3.2 mm) Swagelok compression tube fitting.

Connection of argon supply to 3400 Cabinet is 1/8" (3.2 mm) Swagelok compression fitting.



(DI) Water Supply Requirements:

The 3400 uses a recirculating water supply. The system must initially be charged with one gallon of water.

The water system will require servicing every 90 days to replace water and service filtration system.

Exhaust Vent Requirements:

Two waste gas ports of 3/8" & 1/4" (9.5 mm and 6.3 mm) must be vented outside the shelter.

Volume ~ 1 ft³/min (30 L/min) with occasional 1.4 ft³/min (40 L/min) intervals.

Waste volume is approximately 0.4 ft³/min (12 L/min) spiking to 1 ft³/min (30 L/min) occasionally.

Venting of the of the exhaust gas ports may be required.

Data Retrieval Requirements:

Two 4-20 mA analog output channels retrieve instrument mercury concentration results.

Laptop PC (optional) for direct communications and data retrieval with 3400-ANLZ controller.

Terminal application required to establish communication with the 3400-ANLZ. This terminal communication can also be utilized for altering the 3400 configuration settings.

Ethernet capabilities at 10 or 100BaseT as required by specific application design (i.e. communication to a data logger).

Internet access if desired for support such as remote assistance.

Broadband VPN connectivity is essential for remote assistance if access to the internet is not available. Tekran accepts multiple-user provided VPN types, contact the Knoxville office for details.

Three static IP addresses are required if a data logger is used to collect ModBus data.