

Vigilante AQS



Series = Vigilante AQS™ Air Quality Station (Version 2 – Next Generation)

VAQS-V2 = Vigilante AQS™ Air Quality Station;
 Web Page configurable;
 Enclosure designed to IP65/NEMA 4X;
 Universal power supply (24VDC, 85-264 VAC, 47/63 Hz, PoE);
 Push buttons, LED display & status lights;
 Barometric pressure;
 Integral mounted pressure compensated humidity; wet & dry bulb temperature;
 worker heat stress & thermal workload;
 Gas TWA and STEL calculations;
 Onboard 3-day datalogger;
 CE Compliant
 Native Ethernet Modbus TCP/IP and EtherNet/IP™ communication protocols;
 Dual RJ45 copper connection ports;
 All values, inputs and outputs and diagnostics are available through the digital registers.

1 to 4 = Integral Gas Sensors (Maximum 4)

NR	Not Required
G000	CO 25PPM
G001	CO 100PPM
G002	CO 500PPM
G003	CO 1000PPM
G004	NO ₂ 10PPM
G005	NO 100PPM
G006	NO 500PPM
G007	NO 1000PPM
G008	O ₂ 0-25%
G009	H ₂ S 50PPM
G010	H ₂ S 100PPM
G011	SO ₂ 10PPM
G012	SO ₂ 1000PPM
G013	ClO ₂ 0.5PPM
G014	Cl ₂ 5PPM
G015	NH ₃ 100PPM
G016	CO ₂ 0.5%
G017	CO ₂ 2%
G018	CO ₂ 5%
G019	LEL (CH ₄) 0-100%
G020	LEL (C ₃ H ₈) 0-100%
G021	HCN 10PPM
G027	NO ₂ 5PPM

Note 1: See Table 2 for details.

5 to 12 = Remote Sensors

(Maximum of 4 Remote Sensor Modules with 2 of the same sensors per module)

NR = Not required.

DR = Universal drift, tunnel, heater house or shaft type airflow installation; complete with airflow sensors, cables and junction box.

LR = Long range tunnel or drift type airflow installation; complete with airflow sensors, cables and junction box.

DM = Duct mount airflow installation; c/w airflow sensors, cables and junction box.

PF = Primary fan airflow installation; c/w airflow sensors, cables and junction box.

RGxxx = Remote gas sensor, where xxx is three-digit code from Table 2. Maximum of (8) gas sensors per Vigilante AQS™ (4 Integral & 4 Remote).

RRH = Remote mounted pressure compensated climate sensor; relative humidity, wet and dry bulb temperature, worker heat stress & thermal work limit. (Maximum of two per Vigilante AQS™).

AL = Integral tri-colour LED alarm light

RAL = Remote tri-colour LED alarm light (mounted on a remote plate).

PT = Digital pressure transmitter, 1-1/2" NPT flush mounted stainless steel transmitter. Include full part number with this option. See following pages for details.

PPT = Digital paste or back fill pressure transmitter, 2" NPT flush mounted stainless steel transmitter with a 3/4" plate diaphragm. Include full part number with this option. See following pages for details.

DPT = Digital differential pressure transmitter, 1-1/2" NPT flush mounted stainless steel transmitter. Include full part number with this option. See following pages for details.

Note 1: Select NR when sensors are not used.

Note 2: 5 different remote sensor module types. 2 sensor inputs of the same type per module

Note 3: Maximum of four (4) airflow sets per VAQS.

Note 4: See airflow sensor details.

13+ = Options

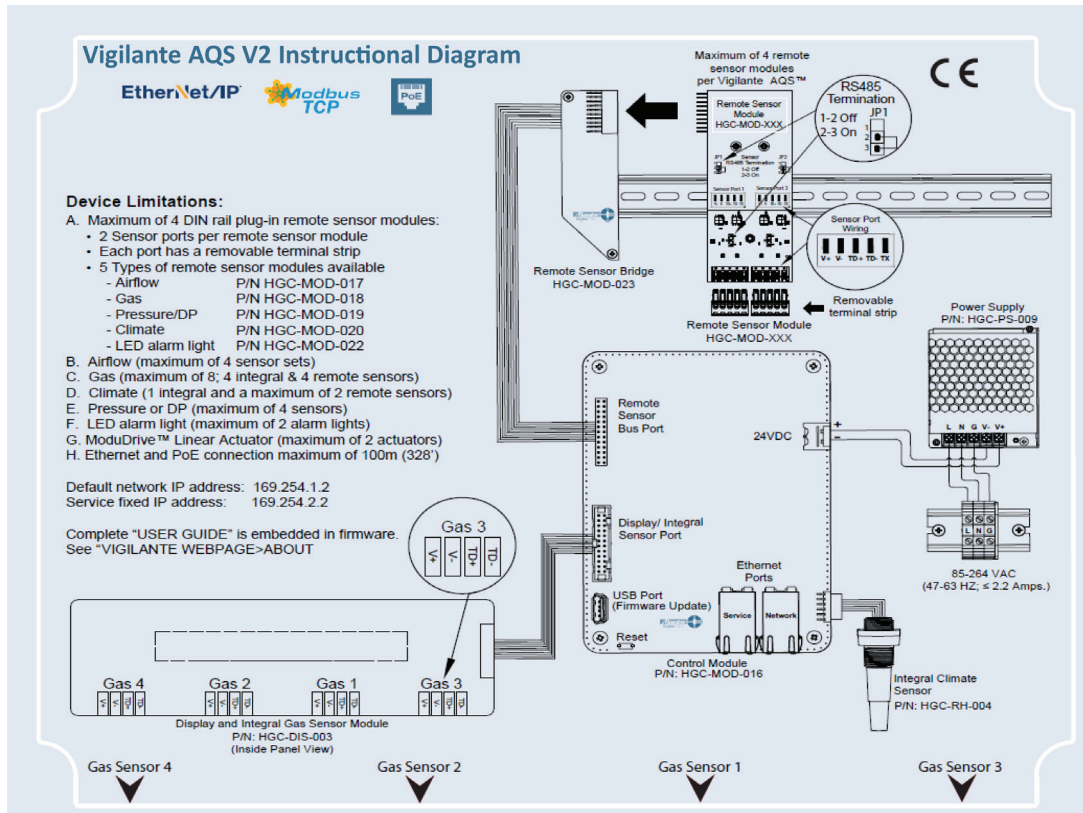
(Extend matrix as required)

NR = Not required.
BP = Bumper protection (One required for each drift mounted airflow system).
IM = VAQS and gas sensors mounted on a single aluminum checker plate, c/w stainless steel mounting hardware.

RM = VAQS mounted on an aluminum checker plate and gas sensors are mounted on a second checker plate for remote mounting, c/w stainless steel mounting hardware.

ESA = ESA (Electrical Safety Authority) approval for general purpose applications.

CSA = CSA special approval for general purpose applications.



AIRFLOW SENSOR ARRANGEMENT TYPES

DR – Universal airflow sensor mounting



- Universal airflow sensor mounting for drift, tunnel, heater house and shaft mounting installations for applications with a maximum width of 10 m (33 feet).
- Easy airflow sensor alignment with built-in optical alignment lasers.
- Includes two ultrasonic airflow sensors; two mounting brackets; two sensor cord sets both 25 metres (82') & one junction box on an aluminum mounting plate
- Heavy duty 316L Stainless Steel tilt and swivel mounting bracket with 18-8 SS hardware. Built in 1/2" (13 mm) mounting holes.

LR – Long range tunnel or drift airflow sensor mounting



- Long range airflow sensor mounting for wide drift or tunnel installations normally found in potash or salt mines and road or railway tunnels with a maximum width of 20 m (66 ft.)
- Easy airflow sensor alignment with built-in optical alignment lasers.

- Includes two ultrasonic airflow sensors; two mounting brackets; two sensor cord sets both 25 metres (82') & one junction box on an aluminum mounting plate
- Heavy duty 316L Stainless Steel tilt and swivel mounting bracket with 18-8 SS hardware. Built in 1/2" (13 mm) mounting holes.

DM – Universal Duct Mounting



- Includes two ultrasonic airflow sensors; two flexible, gasketless, corrosion resistant polyurethane mounting brackets for rigid duct installations from 36" to 60" (900 to 1500 mm) diameters; two sensor cord sets both 25 metres (82') & one junction box on an aluminum mounting plate

PF – Primary or Booster Fan (inlet cone) Mounting



- Includes two ultrasonic airflow sensors; two corrosion resistant polyurethane adjustable, ball & socket mounting brackets & two gaskets for the mounting to the inlet duct work of a primary fan; two sensor cord sets both 25 metres (82') & one junction box on an aluminum mounting plate
- NOTE: If the sensors are to be installed on the discharge side of the fan, the flow profile will need to be fully developed for all variable speed or variable pitch applications

GAS SENSOR OPTION CODES



Integral mounted gas sensor (mounted on Vigilante AQS™ or Zephyr AQS™)



Remote gas sensors and/or remote mounted humidity sensor (mounted remotely to Vigilante AQS™)

TABLE 2 - GAS SENSOR OPTION CODES

INTEGRAL GAS SENSOR CODE	REMOTE GAS SENSOR CODE	GAS, TYPE & RANGE
•G000	•RG000	•CO; EC; 25 PPM
•G001	•RG001	•CO; EC; 100 PPM
•G002	•RG002	•CO; EC; 500 PPM
•G003	•RG003	•CO; EC; 1000 PPM
•G004	•RG004	•NO ₂ ; EC; 10 PPM
•G005	•RG005	•NO; EC; 100 PPM
•G006	•RG006	•NO; EC; 500 PPM
•G007	•RG007	•NO; EC; 1000 PPM
•G008	•RG008	•O ₂ ; EC; 0-25%
•G009	•RG009	•H ₂ S; EC; 50 PPM
•G010	•RG010	•H ₂ S; EC; 100 PPM
•G011	•RG011	•SO ₂ ; EC; 10 PPM
•G012	•RG012	•SO ₂ ; EC; 1000 PPM
•G014	•RG014	•Cl ₂ ; EC; 5 PPM
•G015	•RG015	•NH ₃ ; EC; 100 PPM
•G016	•RG016	•CO ₂ ; IR; 0.5%
•G017	•RG017	•CO ₂ ; IR; 2%
•G018	•RG018	•CO ₂ ; IR; 5%
•G019	•RG019	•LEL Methane; IR; 0-100%
•G020	•RG020	•LEL Propane; IR; 0-100%
•G021	•RG021	•HCN; EC; 10 PPM
•G027	•RG027	•NO ₂ ; EC; 5 PPM

EC = Electrochemical sensor (approximate 2 year sensor life)

IR = Infrared sensor (approximate 5 year sensor life)

PRESSURE AND DP TRANSMITTERS

Digital Pressure Transmitter Model

PT-G-B-NR \$2275.00 each



- -0.1 to 0.1 Bar (-40 to +40" W.C); $\leq 0.5\%$ of full scale accuracy; $\pm 0.25\%$ F.S. accuracy; 3 Bar (43 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 5 pin connector
- Flush mounted 1-1/2" NPT (male) 316L SS process connection with Ceramic sensor; FKM (Viton) seal; Gortex filter
- -25 to +85°C (-13 to +185°F) temperature range
- Typically used on primary/booster fans and automated regulators
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item)

Digital Pressure Transmitter Model

PT-H-B-NR \$2600.00 each



- -0.1 to 0.1 Bar (-40 to +40" W.C); $\leq 0.5\%$ of full scale accuracy; $\pm 0.25\%$ F.S. accuracy; 3 Bar (43 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection
- Flush mounted 1-1/2" NPT (male) 316L SS process connection with Ceramic sensor; FKM (Viton) seal

- 3 metres of PUR connection cable and J-Box with two Gortex filters for high condensing environments
- -25 to +85°C (-13 to +185°F) temperature range
- Typically used in extreme humidity and condensing conditions normally on return raises

Digital Pressure Transmitter Model

PT-D-B-NR \$2175.00 each



- 0 to 10 Bar (0 to 145 psig); $\leq 0.35\%$ of full scale accuracy; $\pm 0.5\%$ repeatability; 600 Bar (8700 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 4 pin connector
- Flush mounted 1-1/2" NPT (male) 316L SS process connection; FKM (Viton) seal
- -25 to +85°C (-13 to +185°F) temperature range
- Typically used on water applications for each mine level
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item)

Digital Pressure Transmitter Model

PT-E-B-NR



- 0 to 100 Bar (0 to 1450 psig); $\leq 0.35\%$ of full scale accuracy; $\pm 0.5\%$ repeatability; 600 Bar (8700 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 4 pin connector

- Flush mounted 1-1/2" NPT (male) 316L SS process connection; FKM (Viton) seal
- -25 to +85°C (-13 to +185°F) temperature range
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item) AQS, 4 wire connection; M12, male, 4 pin connector

Digital Paste/Back Fill Pressure Transmitter Model # PPT-E-C-NR



- 0 to 100 Bar (0 to 1450 psig); $\leq 1.0\%$ of full scale accuracy; $\pm 0.5\%$ repeatability; 600 Bar (8700 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 4 pin connector
- Flush mounted 2" NPT (male) 316L SS process connection; FKM (Viton) seal; silicon oil fill; heavy duty 1/2" thick plate seal for abrasive applications
- -25 to +85°C (-13 to +185°F) temperature range
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item)

Digital Paste/Back Fill Pressure Transmitter Model # PPT-F-C-NR



- 0 to 400 Bar (0 to 5800 psig); $\leq 1.0\%$ of full scale accuracy; $\pm 0.5\%$ repeatability; 1000 Bar (14500 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 4 pin connector
- Flush mounted 2" NPT (male) 316L SS process

connection; FKM (Viton) seal; silicon oil fill; heavy duty 1/2" thick plate seal for abrasive applications

- -25 to +85°C (-13 to +185°F) temperature range
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item)

Digital Differential Pressure Transmitter Model # DPT-G-B-NR



- -0.1 to 0.1 Bar (-40 to +40" W.C); $\leq 0.5\%$ of full scale accuracy; $\pm 0.25\%$ F.S. accuracy; 3 Bar (43 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection; M12, male, 5 pin connector
- Flush mounted 1-1/2" NPT (male) 316L SS process connection with Ceramic sensor; FKM (Viton) seal; Gortex filter
- -25 to +85°C (-13 to +185°F) temperature range
- Typically used on primary/booster fans and automated regulators
- NOTE: Includes HGC-SC-002 interconnection cable (can be supplied as a separate line item)

Digital Differential Pressure Transmitter Model # DPT-H-B-NR



- -0.1 to 0.1 Bar (-40 to +40" W.C); $\leq 0.5\%$ of full scale accuracy; $\pm 0.25\%$ F.S. accuracy; 3 Bar (43 psig) maximum over-load pressure
- Modbus RS-485 communication to Vigilante AQS, 4 wire connection
- Flush mounted 1-1/2" NPT (male) 316L SS

- process connection with Ceramic sensor; FKM (Viton) seal
- 3 metres of PUR connection cable and J-Box with two Gortex filters for high condensing environments
- -25 to +85°C (-13 to +185°F) temperature range
- Typically used in extreme humidity and condensing conditions normally on return raises

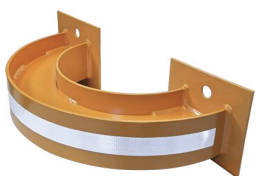
Pressure and DP sensor cable Model # HGC-SC-002



- 25 metres (82') interconnection cable to be used with any digital differential or pressure transmitter to connect to either a Zephyr AQS or Vigilante AQS
- Black PVC jacket, PA connector body, nickel-plated brass coupling nut and silver plating, IP 67 rating, CSA LR6837 and cCSAus certified
- 0.5 kg/1.1 lb

BUMPER PROTECTION AND MOUNTING OPTIONS

BP – Lower drift sensor bumper



- Heavy duty steel, painted alkyd safety orange with reflective tape. Bumper is to be installed slightly lower than sensor. The bumper will help protect the sensor from mobile equipment. 16 kg/35 lbs weight

- *** TOTAL SHIPMENT WEIGHT AND DIMENSIONS INCLUDING PACKAGING IS 45 LBS - 16" X 30" X 10" (20.5 KG - 406 mm X 762 mm X 254 mm)

IM – Integral Mounting Option



- System mounted on an aluminum checker plate, complete with stainless steel mounting hardware and carrying handles

RM – Remote Mounting Option



- Remote mounted gas and/or humidity sensors on aluminum checker plate with a junction box, VAQS is mounted on a 2nd checker plate, complete with stainless steel mounting hardware and carrying handles
- The remote gas sensor plate size is dependent on the number of gas sensors required. Maximum of six (6) gas sensors per single Vigilante AQS™.