CTS-M5

CTS-M5 SERIES TOXIC GAS TRANSMITTER/SENSOR

The CTS-M5 Series is a microprocessor based transmitter. It uses an Electrochemical gas sensor to detect a variety of gases. Typical applications are enclosed parking facilities, refrigeration rooms and oxygen storage rooms. QEL Engineers, through extensive research and development, have designed the M5 to be an industry leader in performance and application. The M5 offers good value. Standard features within the M5 can only be found as expensive options in other manufacturers' product. A digital display (LCD), push-button programming and on-board meter jacks are all standard. The transmitter provides an analog output of 4-20 mA DC or 2-10 VDC, linear to the measured gas range, for transmission to the Building Automation System (BAS) or controller supplied by others. The signal is fully user assignable over the gas range and can be configured for rising or falling gas concentration. In addition, the RS-485 communications is built in. Input voltages of 24 VDC or 24 VAC with wide tolerances are acceptable. Relay setpoints may be seen as increasing or decreasing actuation simply by adjusting the deadband relationship. Set the deactuation point above the actuation setpoint and the M5 will automatically alarm on decreasing concentrations. Relay setpoints are always present even though the relays themselves are an option. Calibration is very easy - simply apply the calibration gas and adjust the potentiometer to the desired reading on the display. The standard enclosure is a fire retardant Polycarbonate/ABS blend.

MODEL NUMBER ORDERING CODE

C	T	S	-	M	5				X	-	Q	0			0	0	0

Gas Type
(See Gas Selection Table for #)

Revision (Factory Provided) — X

Enclosure - Wall Mount — Q

Options (Enter 0 for No Selection)

Relays (2 x SPDT & Buzzer) — R

Conformal Coating — W

GAS SELECTION TABLE

Gas Type	#	Max. Range
Oxygen - O_2	**130**	0 to 25% v/v
Nitrogen Dioxide - NO_2	**150**	0 to 10 ppm
Carbon Monoxide - CO	**160**	0 to 250 ppm
Nitric Oxide - NO	**190**	0 to 200 ppm
Ammonia - NH_3	**220**	0 to 100 ppm

PRINCIPLE OF OPERATION

Electrochemical gas sensors are micro-fuel cells designed to be maintenance free and stable for long periods. Gas continuously enters the self-contained cell through a flow limiting diffusion barrier. The target gas reacts within the electrolyte creating a microamp current flow between the electrodes. No fluid replenishment is required as these cells are not self-consuming. The cell electrodes degrade with time resulting in a typical working life of 2 to 3 years.

The CTS-M5 transmitter is powered by a nominal 24 V external power supply in a two-wire connection. It transmits a 4-20 mA, 2-10 V, or an RS-485 signal over the calibrated range of the sensor selected. The transmitter is factory configured and calibrated for the sensor selected when ordered as a complete assembly. This universal transmitter accepts any of the listed sensors into a plug-in socket on the board. Calibration is achieved through a simple zero and span adjustment using the appropriate calibration gas concentration for the sensor installed.

SPECIFICATIONS

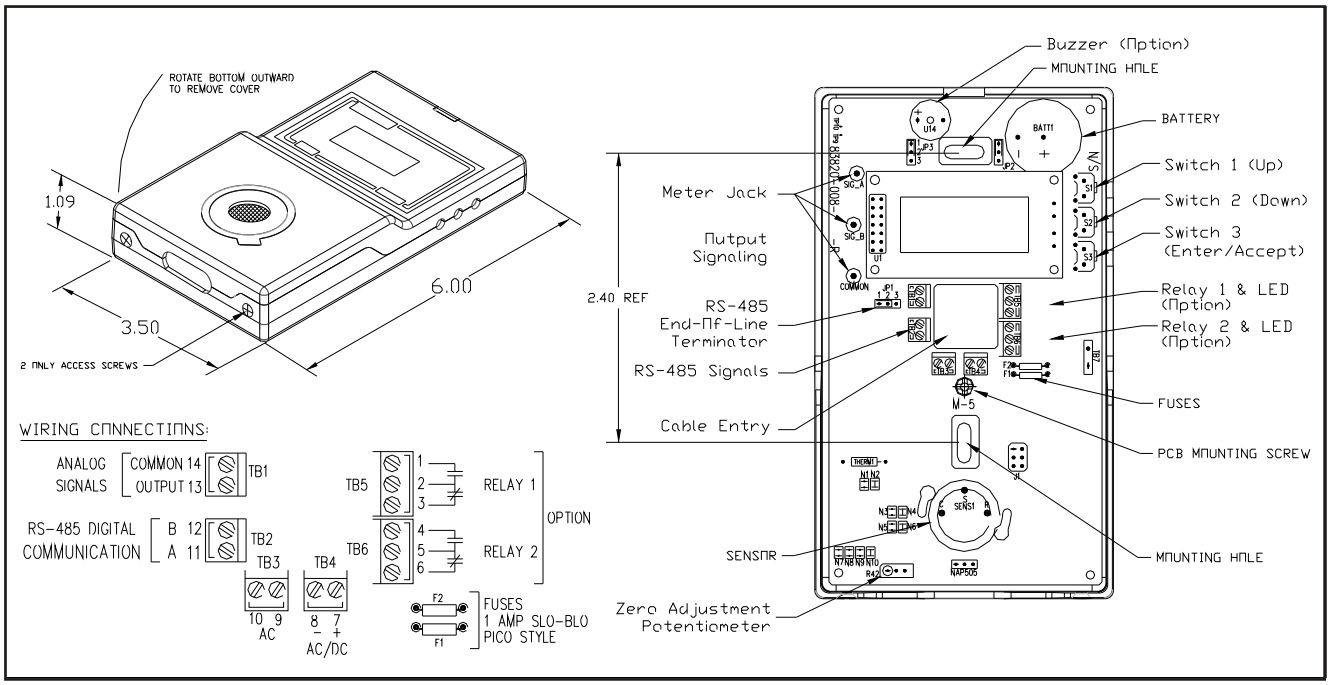
Input Power:	24 Volts AC Floating 24 Volts AC One side grounded 24 Volts DC
Enclosure Materials:	Polycarbonate / ABS blend Fire Retardant
Temperature:	-20º C to 40º C
Humidity:	Continuous 15 to 90% RH, non-condensing Intermittent 0 to 99% RH, non-condensing
Pressure:	Atmospheric ±10%
Response Time:	Less than 60 seconds for 90% of step change
Accuracy:	± 2.5% of reading
Repeatability:	± 1% of reading
Factory Set Range:	O_2, 0 to 25% v/v NO_2, 0 to 6ppm CO, 0 to 125ppm NO, 0 to 100ppm NH_3, 0 to 50ppm

Sensor Type:	Electrochemical
Sensor Life:	Typical 2 to 3 years
Output Signal *: (user selectable)	Analog, 4-20 mA or 2-10 VDC (linear) Digital, RS-485
Display:	Alphanumeric - 2 line X 8 digit LCD
Relay & Buzzer: (optional)	Two, Single pole double throw (SPDT), Form C,1 amp dry contact CSA 1500 V FCC Part 68 85dB @ one foot
Time Delays:	Actuation - 0 to 60 minutes in 5 minute increments De-Actuation - 0 to 60 minutes in 5 minute increments
Mounting:	Screw mounts to a standard 2″ X 4″ electrical junction box.

*** FULLY ASSIGNABLE 4-20 mA or 2-10 VDC OVER CHOSEN RANGE**

4 mA / 2 VDC may be set anywhere in range, 20 mA / 10 VDC may be set anywhere in range

Signal is assigned linearly between the two points
Signal may be rising or falling with gas concentration



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