

Data Sheet

VANGUARD™

Wireless Fixed Point Gas Detector



Supplied by

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Vanguard™

Wireless Fixed Point Gas Detector



Wireless**HART**



Building a Part Number

	Model TCD60	Comms H	Antenna 2	FLEXMount A	FLEXsense 03	Sales Options M207
Model _____						
TCD50	Base transmitter for Gr C & D / IIB zones					
TCD60	Base transmitter for Gr A,B,C & D / IIC zones					
Communications _____						
H	WirelessHART protocol					
Antenna _____						
1	2.4 GHz; 2.0 dBi (TCD50 Only)					
2	2.4 GHz; 2.0 dBi (TCD60 Only)					
3	2.4 GHz; 4.35 dBi (TCD60 Only)					
4	2.4 GHz; 6.0 dBi (TCD60 Only)					
FLEXmount™ _____						
A	Standard Mount (2" pipe mount)					
B	Magnetic Mount					
C	Universal Mount					
FLEXsense™ _____						
00	No sensor					
03	Methane (CH ₄)					
04	Hydrogen Sulfide (H ₂ S)					
			05	Carbon Monoxide (CO)		
			06	Ammonia (NH ₃)		
			07	Propane (C ₃ H ₈)		
Optional (select up to 3) _____						
M211	Vanguard Inspection Report (NDIR only)					
M446	Stainless Steel Tag					
M207	Programmed network ID and Join Key (End user supplied)					

NOTE: Must order battery separately.

Accessories	
6361-807	Battery pack; 7.2V operating voltage. Ordered as a separate item. Battery will ship separately.
62169-50	Gas Calibration Kit including Cap and Regulator. Ordered as a separate item.
6361-811	FLEXmount™ Standard Mounting bracket kit
6361-817	FLEXmount™ Magnetic Mounting bracket kit
6361-818	FLEXmount™ Universal Mounting bracket kit
62169-66	2 dBi, 2.4 GHz Antenna for TCD60
62169-67	4.35 dBi, 2.4 GHz Antenna for TCD60
62169-68	6 dBi, 2.4 GHz Antenna for TCD60
62169-69	Vanguard Remote Antenna Kit
62169-70	Vanguard Remote Sensor Kit

FLEXsense replacement sensors	
62169-60	Methane (CH ₄) sensor; sensor pack only
62169-61	Hydrogen Sulfide (H ₂ S) sensor; sensor pack only
62169-62	Carbon Monoxide (CO) sensor; sensor pack only
62169-63	Ammonia (NH ₃) sensor; sensor pack only
62169-64	Propane (C ₃ H ₈) sensor; sensor pack only

Specifications

	Methane (CH ₄)	Propane (C ₃ H ₈)	Hydrogen Sulfide (H ₂ S)	Carbon Monoxide (CO)	Ammonia (NH ₃)
Sensor Type	NDIR	NDIR	Electrochemical	Electrochemical	Electrochemical
Storage Temp	72 °F (22 °C) Recommended				
Storage Life	3 years	3 years	1 year	6 months	6 months
Service Life ^[i]	5 years	5 years	2 years	2 years	2 years
Min Op. Temp	-40 °F (-40 °C)	-40 °F (-40 °C)	-40 °F (-40 °C)	-40 °F (-40 °C)	-4 °F (-20 °C)
Max Op. Temp	149 °F (65 °C)	149 °F (65 °C)	149 °F (65 °C)	131 °F (55 °C)	105 °F (40 °C)
Range	0 to 100% LEL	0 to 100% LEL	0 – 100 ppm	0 – 500 ppm	0 – 100 ppm
Resolution	1% LEL	1% LEL	1 ppm	1 ppm	1 ppm
Accuracy ^[ii]	±2 LEL or ±5% of indication ^[iii]	±2 LEL or ±5% of indication ^[iii]	±2 ppm or ±5% of indication ^[iii]	±5 ppm or ±5% of indication ^[iii]	±2 ppm or ±5% of indication ^[iii]
Response Time ^[iv] (T90)	30 sec	30 sec	<30 sec	<30 sec	<5 min
Stabilization Time	2 min	2 min	1 min	1 min	5 min

[i] Expected operational life varies with environmental conditions and gas exposure
 [ii] At standard conditions: 68°F (20°C) and 1.0 atm. Accuracy may vary with frequency, accuracy of calibration, and environmental conditions

[iii] Whichever is greater
 [iv] Excludes latency due to burst rate

Transmitter Operating Temperature	-40 °F (-40 °C) to 149 °F (65 °C)
Operating Humidity	0% to 98% RH non-condensing
Material	Aluminum alloy (maximum copper content at 0.25%) with powder polyester paint; 316 stainless steel; nickel-plated brass; tempered glass
Ingress Protection	Type 4X (enclosure only)
Display	2.25"W x1.25"H (57.2 mm x 31.8 mm) graphical LCD display
Display Language	English
Memory	Non-volatile EEPROM
Antenna	2.4 GHz, Hazardous Area Antenna
Mounting	FLEXmount™ Options
Weight	7.84 lbs (Base) 9.61 lbs (Base with Sensor and Battery)
Communication Protocol	WirelessHART® HART 7.2 EDDL and DTM available at www.ueonline.com/vanguard

Process Variables	Primary Variable (PV): Hydrocarbons & hydrogen concentration in %LEL Toxic gas concentration in ppm Secondary Variable (SV): Temperature (°C); not available for hydrocarbon sensor Tertiary Variable (TV): Days since calibration (days) Quaternary Variable (QV) Battery voltage (volts)
Programming Access	HART hand-held communicator, or via HART modem HART terminals located in rear battery compartment
Calibration/Bump Test Access	Single external button
Batteries	Battery pack contains two Lithium battery cells

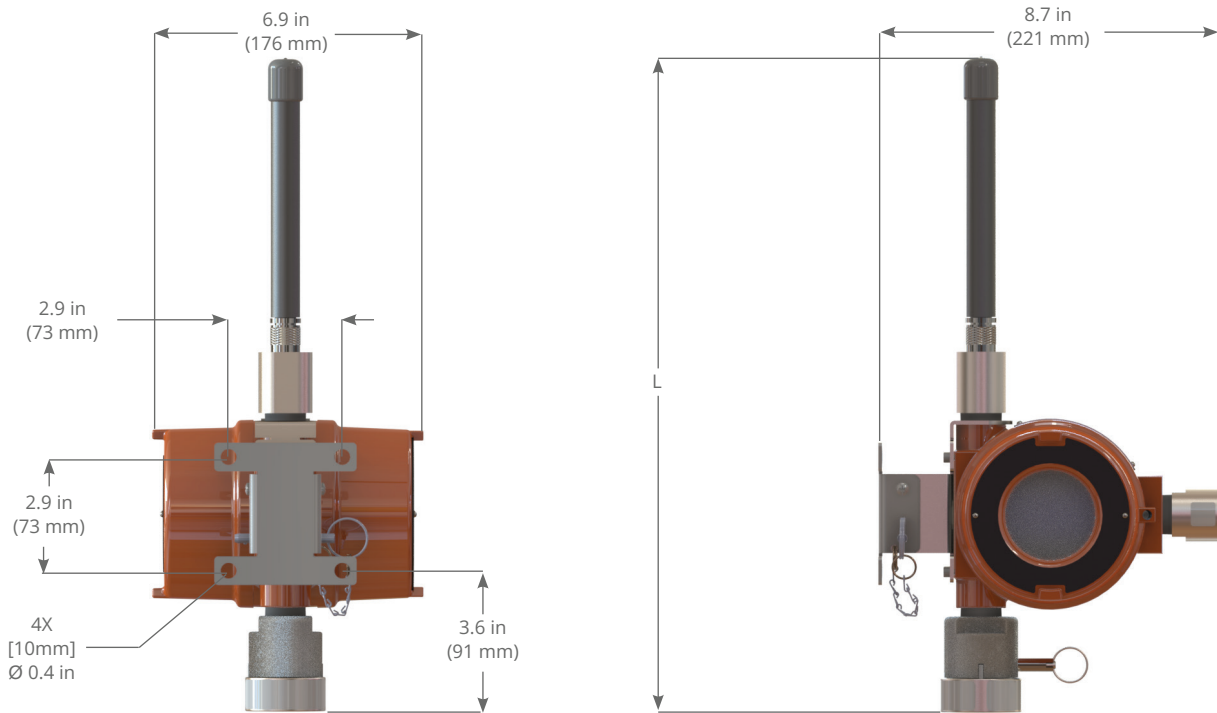
Certifications

Agency	Region	Classification	
		TCD 50	TCD 60
cETLus	North America ^[vii]	Class I, Div. 1, Groups C & D, T4 Enclosure Type 4X, IP66 ^[vi]	Class I, Div. 1, Groups A, B, C & D, T4 Enclosure Type 4X, IP66 ^[vi]
		United States Class I, Zone 1 AEx db ia op is [ia] IIB T4 Gb, Tamb: X ^[vi] Canada Ex db ia op is [ia] IIB T4 Gb, Tamb: X ^[vi]	United States Class I, Zone 1, AEx db ia op is [ia] IIC T4 Gb Tamb: X ^[vi] Canada Ex db ia op is [ia] IIC T4 Gb, Tamb: X ^[vi]
ATEX	Europe ^[vii]	ITS-16ATEX18474X II 2 (2) G Ex db ia op is [ia] IIB T4 Gb IP66 ^[vi] Tamb: X ^[vi]	ITS-I21ATEX31360X II 2 (2) G Ex db ia op is [ia] IIC T4 Gb IP66 ^[vi] Tamb: X ^[vi]
IECEX	International ^[vii]	IECEX ETL 16.0016X Ex db ia op is [ia] IIB T4 Gb IP66 ^[vi] , Tamb: X ^[vi]	IECEX ETL 21.0065X Ex db ia op is [ia] IIC T4 Gb IP66 ^[vi] , Tamb: X ^[vi]

[v] Enclosure Type 4X and/or IP66 rating excludes sensor
 [vi] Ambient operating temperature range varies with gas sensor

[vii] Gas detector performance testing per UL/IEC 60079-29-1 pending.

TCD50 & TCD60



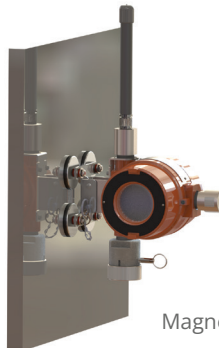
Models	Antenna	Gain (dBi)	L
TCD50	1	2	12.4" (315 mm)
	2	2	16.2" (412 mm)
TCD60	3	4.35	16.6" (422 mm)
	4	6	18.9" (482 mm)

Dimensional drawings for all models may be found at www.ueonline.com

Mounting options



A
Standard Mount
(2" pipe mount)



B
Magnetic Mount



C
Universal Mount