8200 Current Output Transmitter

Transmit your liquid level to inventory, alarm or relay systems via an analog (4...20 mA) signal

FM C US APPROVED

IECEx

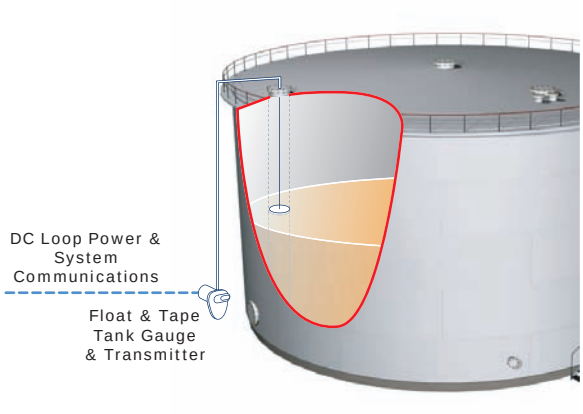
FuelsManager® Compatibility

Features

- Mounts directly to the 2500 ATG, 2592 Cover Position Indicator and 6700 Liquid Level Indicator
- Mounting adapters available for other standard float gauges
- Two wire, industry standard output or 4-20 mA or 10-50 mA, jumper selectable
- Optional two or four SPDT cam-operated switches
- 115 or 230 Vac on-board power supply available
- Highly accurate - 0.25% over full range
- Fully approved to FM, cFM, ATEX and IECEx

Applications

The 8200 Current Output Transmitter (COT) is a precision analog transmitter designed to relay level information via field communications to the control room. The 8200 COT provides an increase in current output with a rising level using a 4-20 mA or 10-50 mA signal. It can also be ordered with a reverse "outage" reading output.



Function and System Design

The 8200 Current Output Transmitter (COT) is designed to connect to most standard float gauges. The mechanical drive coupling rotates in response to changes in liquid level. In turn, the 8200 COT's potentiometer records this as a current change and then transmits these changes as a level measurement to a local display or the control room system.

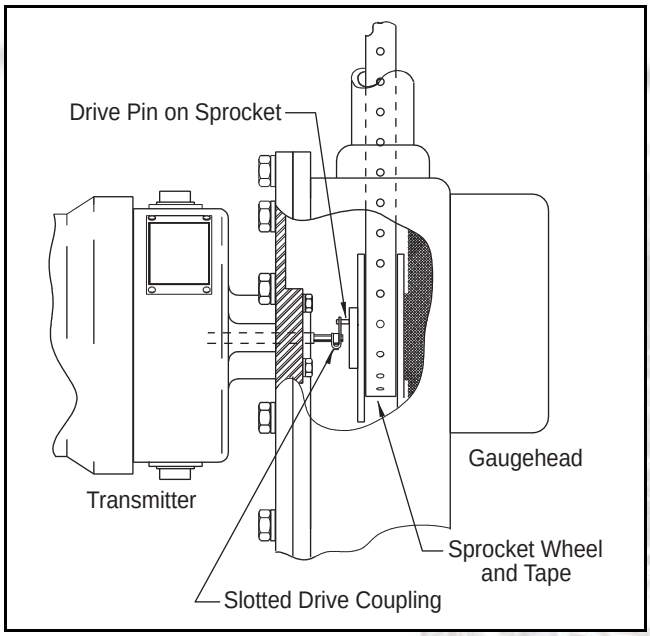
Installation Guidelines

The following information should be used as a guide only; please refer to the operation and maintenance manual for complete installation instructions. You are able to leave the tank in-service and the mechanical float gauge in place while you install and configure the 8200 COT.

Before the 8200 COT is connected to a mechanical float gauge at the tank side, check the following:

1. The mechanical float gauge is operating correctly.
2. There is sufficient space around the mechanical gauge to install the transmitter and accessories (such as conduit and cabling).
3. You have the correct transmitter/mechanical gauge adaptor if required.
4. You have the correct field connections at the gauge-head ready to connect to the 8200 COT (i.e. power, communications and temperature sensor wiring).

To mount the transmitter onto the gauge, the back cover of the mechanical float gauge must first be removed. Mount the 8200 COT in place of the access cap, making certain that the "TOP" of the 8200 COT housing lines up with the top of the back cover. Make certain that the slot in the 8200 COT drive coupling engages with the pin on the tape sheave of the mechanical float gauge.



8200 COT connected to a 2500 Automatic Tank Gauge

Inputs & Outputs

Wiring and Configuration

The 8200 COT is configured after it has been installed onto the tank gauge and wired for operation. The rotary switches on the main PCB are used to configure the transmitter's baud rate, unit address, etc.

While the operator is calibrating the device, the LEDs, situated above the rotary switches provide an indication that the transmitter matches the manual level reading and has been calibrated correctly.

Input Power

The 30 volts DC required for operation may be supplied by the user or through a 115 or 230 Vac on-board power supply.

Analog Output

Nine (9) different factory calibrated level ranges (fractional or Metric reference dials) are available with a range adjustment of 50 to 100% of the specified range.

The current loop variations are carried across a 2-wire local bus to a central receiver or local display. As standard configuration, there is an increase in current output with a rising level (innage), but the transmitter may be configured for a "reverse" (outage) reading output.

Limit Switches

Two (2) or four (4) SPDT limit switches can be supplied as an option. They have the following ratings:

- 20 A @ 125, 250, 460 VAC
- 10 A @ 125 VAC Tungsten filament Lamp Load
- 1 HP @ 115 VAC, 2 HP @ 250 VDC
- 1/2 A @ 125 VDC, 0.25 A @ 250 VDC

The optional switches can be selected for normally open or normally closed operation. They are mechanically operated directly from the main drive gearing and can be independently configured to switch at any desired tank level.

Accessories

Spare Parts and Maintenance Kits

The 8200 COT is designed and manufactured to provide accurate and reliable operation without an intensive maintenance schedule.

Varec can provide spare parts, maintenance kits, preventive maintenance advice, training and warranties. Please consult your Operation, Installation and Maintenance Manual or a Varec representative for more details.

Transmitter Adapter Kits

The following kits include the necessary parts, including an adaptor bracket to allow the 8200 COT to mount to other manufacturers' tank gauges.

Part #	Description
13-05956-102	Adapter kit for mounting to L&J 92514, 92020 and 92030 gauges
13-05956-202	Adapter kit for mounting to L&J 92006 and Whessoe Varec 2006, 2026 and 2036 gauges

Technical Specifications

The following specifications apply to the 8200 COT over the normal (ambient) operating temperature range.

System Design

Encoder	Incremental Brush Encoder
Gearing system	Stainless steel, direct drive

Functional

Available ranges	Meters: 0–3.75 m, 0–7.5 m, 0–15 m, 0–24 m Feet: 0–5.0 ft, 0–12.5 ft, 0–25 ft, 0–50 ft, 0–100 ft
Output	4–20 mA or 10–50 mA, jumper selectable
Range adjustment	50–100% range
Span adjustment	45–105%
Allowable loop resistance (loop plus line)	8200 COT with 48 Vdc by user: 1500 Ohms (max) 8200 COT with integral DC supply: 500 Ohms (max)
Signal wires	4–20 mA, two (2) conductors

Physical

Net weight	16 lb (7.3 kg)
Shipping weight	25 (11.3 kg)
Enclosure	Explosion proof cast aluminum, Epoxy painted water tight enclosure Rated IP65 (NEMA 4)
Conduit entries	2900 FTT Enclosure: 2 x 3/4" NPT (standard configuration uses one entry) Terminal junction box: 2 x 3/4" NPT

Environmental

Operating temperature	–13 °F to +185 °F (–25 °C to +85 °C)
Operating humidity	0 to 95% relative humidity non-condensing

Performance

Accuracy	0.25% at 100% span, 0.35% at 45% span

Power

Power requirements	15 to 48 Vdc 115 Vac +/– 10% 50/60 Hz (on board 30 Vdc power supply) 230 Vac +/– 10% 50/60 Hz (on board 30 Vdc power supply)
Operating voltage	15 Vdc – minimum 48 Vdc – maximum

Certifications & Approvals

Factory Mutual (FM)
Class I, Division 1, Groups C & D T5 85 °C Max.
Class I, Zone 1, AEx d IIB T5 Ta=+85°C Max.

Factory Mutual for Canada (cFM)
Class I, Division 1, Groups C & D T585 °C Max.
Class I, Zone 1, Ex d IIB T5 85 °C Max.

ATEX
Class I, Zone 1,
Ex II 2 G, Ex d IIB T5, Ta=85 °C

IECEx
Class I, Zone 1,
Ex d IIB T5, Ta=85 °C

Order Codes

8200 Current Output Transmitter

	Power Input					
	0	15 - 48 VDC				
	1	115 VAC				
	2	220 - 240 VAC				
		Level Ranges				
		1	0 to 12.5 ft			
		2	0 to 25 ft			
		3	0 to 50 ft			
		4	0 to 100 ft			
		5	0 to 3.75 m			
		6	0 to 7.5 m			
		7	0 to 15 m			
		8	0 to 24 m			
			Approvals			
			0	FMus- Explosion Proof - Class I, Division 1, Groups C & D T5 Ta = +85 °C: Flameproof Class I, Zone 1, AEx d IIB T5 Ta=+85°C, Enclosure NEMA 4		
			1	cFM- Explosion Proof - Class I, Division 1, Groups C & D T5 Ta = +85 °C: Flameproof Class I, Zone 1, Ex d IIB T5 Ta=+85°C, Enclosure NEMA 4		
			2	ATEX - Flameproof - Ex II 2 G, Ex d IIB T5 Ta = +85 °C		
			3	IECEx - Flameproof - Ex d IIB T5 Ta = +85 °C		
				General Options		
				0	Additional option not used	
				1	2 SPDT Switches (Normally Open)	
				2	4 SPDT Switches (Normally Open)	
				3	Reverse reading	
				4	Reverse Reading with 2 SPDT Switches (Normally Open)	
				5	Reverse Reading with 4 SPDT Switches (Normally Open)	
					Junction Box	
					0	None
					1	Junction Box
N8200–						Complete product designation

www.varec.com

Corporate Headquarters
5834 Peachtree Corners East
Norcross (Atlanta), GA 30092
USA
Tel: +1 (770) 447-9202
Toll Free: +1 (866) 698-2732
Fax: +1 (770) 662-8939

Houston
5151 San Felipe
Sage Plaza, Suite 1100
Houston, Texas 77056
USA
Tel: (281) 498-9202
Fax: (281) 498-0183

Asia Pacific
Level 8, 91 William St.
Melbourne
Victoria 3000
Australia
Tel: +61 3 8623 6400
Fax: +61 3 8623 6401

Europe
Suite 120, 94 London
Road
Headington, Oxford
Oxfordshire, OX3 9FN
United Kingdom
Tel: 0800 044 5704
Fax: 0844 544 1874

Authorised Representative

If no offical representative is listed here, please visit www.varec.com to find your local representative.

Document Code
TEC018GVAE00311