

# MODEL CT

## TILT LEVEL CONTROLS



MODEL CT-105



MODEL CT-200G

Consisting of a Control Unit and a Tilt Probe, the Model CT senses the presence or absence of material. When suspended from a fixed support, the Probe indicates presence of material when it is tilted 15° for the mercury version or 25° for the non-mercury version. The circuit within the Probe is normally closed when vertical.

### RUGGED LEVEL CONTROLS

Designed for dry bulk material level indication and control applications. These cULus listed control units are enclosed in a rugged cast aluminum housing with LED indicator lights to alert the operator of either the presence or absence of material. Equipped with a surface mount PC board the unit now allows for a maximum of 5,000 feet of cable between the control unit and probe permitting the placement of the control unit in an easily accessible area.

Most models are equipped with intrinsically safe electronics, permitting the probe to be used in environments requiring explosion proof equipment. The control units are available in three different models for use in different environments. The Model CT-105 control unit is NEMA Type 4, 4X for use in general purpose outdoor applications and is dust proof and weather tight. The Model CT-106 control unit is NEMA Type 4, 4X and NEMA Type 9 dust ignition proof construction for use in hazardous locations. The Model CT-107 control unit is NEMA Type 7 explosion proof and NEMA Type 9 dust ignition proof construction for use in hazardous locations.

### FEATURES:

- Durable cast Aluminum NEMA Type housing with optional epoxy coating for corrosive environments.
- Explosion proof control units for use in hazardous locations: Model CT-106 and Model CT-107.
- Bright, energy efficient LED indicator lights.
- Up to 5,000 feet of cable length allows for control unit installation in easily accessible areas.
- Surface mount PC board resistant to shock and vibration.

### ADVANTAGES

- Optional stainless steel probes to safeguard against corrosion.
- Hanger fittings and mounting brackets available to permit easy suspension of probes from fixed supports.
- Our tilt probes are intrinsically safe and cULus listed when used in conjunction with the CT Control Units: Models CT-105, CT-106 and CT-107.
- Heavy duty steel probes for abrasion resistance.
- Fail-Safe logic design defaults to safe condition when there is a loss of power.
- Adjustable time delay to prevent false signals.
- Low 12V DC probe for safety.
- Easy installation and low maintenance.
- Compact probes for use where space is limited.
- Probes are purchased separately. When not connected to our control unit they are not cULus listed.

### CONSTRUCTION DETAILS

The Model CT Control Unit is enclosed in a rugged cast aluminum housing with LED indicator lights labeled "Normal" and "Alarm" to indicate detection status. Within the housing a surface mount PC board has a logic selector switch and adjustable time delay to prevent false signals. There are three terminal contacts for connection to the Probe; three for the input power; and two sets of output contacts, each with one normally open, one normally closed, and one common. Signal lights, relay, and transformer are all accessible with the housing open.



The Model CT Control Unit has a user configurable output relay (using normally closed contacts, normally open contacts or both) which is actuated by either the presence or absence of material. The relay provides a change in contacts as the Probe moves from vertical to tilt and vice versa.

The time delay is adjustable from 0.1 to 35 seconds. This adjustment will delay output relay action. The relay switches to the de-energized position upon reaching

the end of the delay period, as well as upon failure of power to the Control Unit.

When used in conjunction with the Control Units: Models CT-105, CT-106 and CT-107, the Probes are cULus Listed and intrinsically safe. Two Probe sizes are available.

The CT-200G is a compact 6 inch Probe for use on small bins and hoppers where space is limited. The CT-201G is our standard 9 inch, heavy duty Probe for applications where an abrasion resistant Probe is necessary. Both Probes are available in stainless steel for corrosive environments and optional fittings are available to permit easy suspension from fixed supports. Paddle options are available for use on moving materials as a flow indicator. Probes are air tight, dust tight, waterproof and come standard with 25 feet of three conductor 16-3 SO cable. Factory installed cable can be ordered up to 5,000 feet per unit.

### TYPICAL APPLICATIONS

- High level control on hoppers and silos
- Level detection under conveyor stackers
- Indicate back-up at conveyor transfer points
- High level detection in crusher outlets
- Detect high level in trippers
- Indicate plugged conditions in chutes
- Detect flow of material on conveyors
- High level indicator for loading rail cars or trucks



**DETECT LEVELS OF DRY BULK MATERIALS IN A VARIETY OF LOCATIONS**

## MODEL CT - CONTROL UNIT

MODEL	DESCRIPTION	SHPG. WT. LBS
CT-105	1 Double Pole Double Throw (DP/DT) relay for 120 VAC*	8
CT-105B	1 Double Pole Double Throw (DP/DT) relay for 240 VAC*	8
CT-105C	1 Double Pole Double Throw (DP/DT) relay for 24 VAC/VDC*	8
CT-106	1 Double Pole Double Throw (DP/DT) relay for 120 VAC***	8
CT-106B	1 Double Pole Double Throw (DP/DT) relay for 240 VAC***	8
CT-107	1 Double Pole Double Throw (DP/DT) relay for 120 VAC**	8
CT-107B	1 Double Pole Double Throw (DP/DT) relay for 240 VAC**	8

\*GENERAL PURPOSE NEMA TYPE 3, 4, 4X

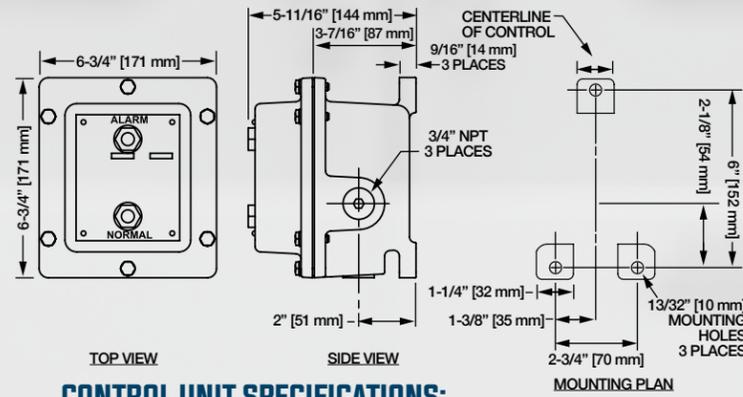
\*\*EXPLOSION PROOF NEMA TYPE 7: Class I (Div. 1 & 2), Groups C & D; Type 9: Class II (Div.1 & 2), Groups E, F & G

\*\*\*DUAL RATED NEMA TYPE 3, 4, 4X; Type 9: Class II (Div. 1 & 2), Groups E, F & G



MODEL CT-107

## CONTROL DIMENSIONS



### CONTROL UNIT SPECIFICATIONS:

CT-105/CT-105B: NEMA Type 4, 4X

CT-106/CT-106B: NEMA Type 4, 4X

NEMA Type 9 Class II, Groups E, F and G

CT-107/CT-107B: NEMA Type 7 Class I, Groups C and D

NEMA Type 9 Class II, Groups E, F and G

- Input Supply Voltage: Standard 120 VAC @ 50/60 Hz; or available 240 VAC @ 50/60 Hz (add suffix B to Model number)
  - Power Consumption: 10 Watts
  - Probe Voltage Output: 12 VDC
  - Output Relay: DP/DT; 5 Amps, 120 VAC Resistive; 5 Amps, 240 VAC Resistive.
  - Time Delay VR1: 0.1 to 35 Seconds. This adjustment will delay output relay action.
  - Indicator Light: Normal (green): Illuminated when relay is energized.
  - Indicator Light: Alarm (red): Illuminated when relay is de-energized.
  - Power failure is indicated if neither light is illuminated.
  - Logic Selector S1: This switch determines when the output relay actuates and de-actuates.
    - Position 1: Relay energizes when the Probe is in the vertical position. Relay de-energizes when Probe is in the tilted position.
    - Null: Middle position with no contact
    - Position 2: Relay energizes when Probe is in the tilted position. Relay de-energizes when Probe is in vertical position.
- Probe Models CT-200G and CT-201G are cULus Listed and intrinsically safe when connected with CT-300G Cable to Conveyor Components Company's Control Units: Models CT-105, CT-106 and CT-107, and when used as intended and installed according to the manufacturer's instructions. Any other use or installation is not cULus Listed or intrinsically safe.

## AVAILABLE PROBE MODELS

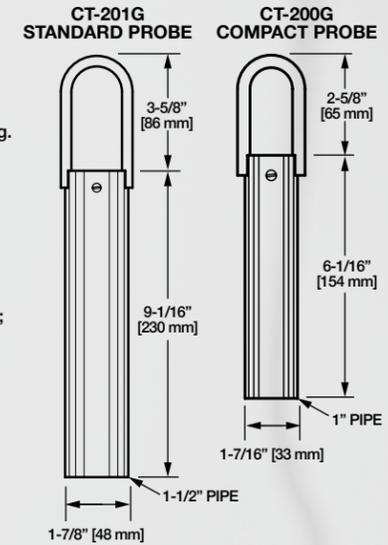
### MODEL CT - PROBES COMPACT 6"

MODEL	DESCRIPTION	SHPG. WT. LBS
CT-200G	Compact 6" probe with 25 feet of cable	5
CT-200GC	Compact 6" tilt probe with 25' feet of 16-3 SO cable included. 3/4"NPT coupling welded to probe.	5.5
CT-200GN	Compact 6" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free).	5.5
CT-200GNC	Compact 6" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free), 3/4" NPT coupling welded to probe.	5.5
CT-200GNC-3/4	Compact 6" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free), 3/4" NPT coupling welded to probe.	5.5
CT-200GP	Compact 6" tilt probe with 25' feet of 16-3 SO cable included. With welded-on paddle.	5.5

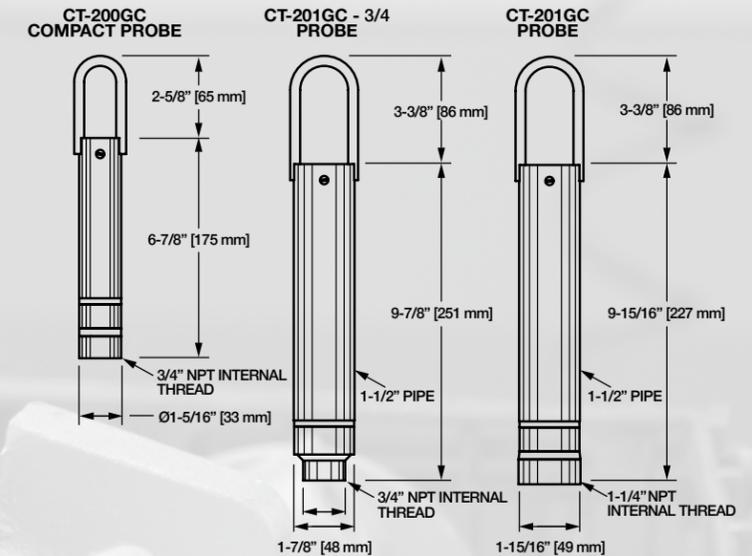
## PROBE DIMENSIONS

### PROBE SPECIFICATIONS:

- CT-201G: Standard heavy-duty probe; 9" [23 cm] long
- CT-200G: Compact probe; 6" [15 cm] long.
  - Probe signal voltage: 12 VDC
  - Probe ratings: 1.5 A @ 120VAC, 1.5mA at 5 VDC
  - Probe actuation angle: 15° from vertical
- CT-201GN: Non-Mercury heavy-duty probe; 9" [23 cm] long
- CT-200GN: Non-Mercury compact probe; 6" [15 cm] long
  - Probe signal voltage: 12 VDC when used with CCC controller
  - Probe ratings: 0.25 A max., 60 V max
  - Probe actuation angle: 25° from vertical
- Each steel Probe contains one SP/ST, normally closed contact. Stainless steel, paddles, epoxy coating and threaded coupling options are available



### COUPLING OPTIONS



### MODEL CT - PROBES STANDARD 9"

MODEL	DESCRIPTION	SHPG. WT. LBS
CT-201G	Standard 9" tilt probe with 25' feet of 16-3 SO cable included.	8.5
CT-201GC	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. 1-1/4" NPT coupling welded to probe.	8.5
CT-201GC-3/4	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. 3/4" NPT coupling welded to probe.	8.5
CT-201GN	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free)	8.5
CT-201GNC	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free), 1-1/4" NPT coupling welded to probe.	8.5
CT-201GNC-3/4	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. Non-mercury (mercury free), 3/4" NPT coupling welded to probe.	8.5
CT-201GP	Standard 9" tilt probe with 25' feet of 16-3 SO cable included. With welded-on paddle.	8.5

\*For Non-Mercury Probe add option "N" to Model number.

\*For 3/4 NPT or 1/4 NPT threaded coupling add option "C" to Model number.

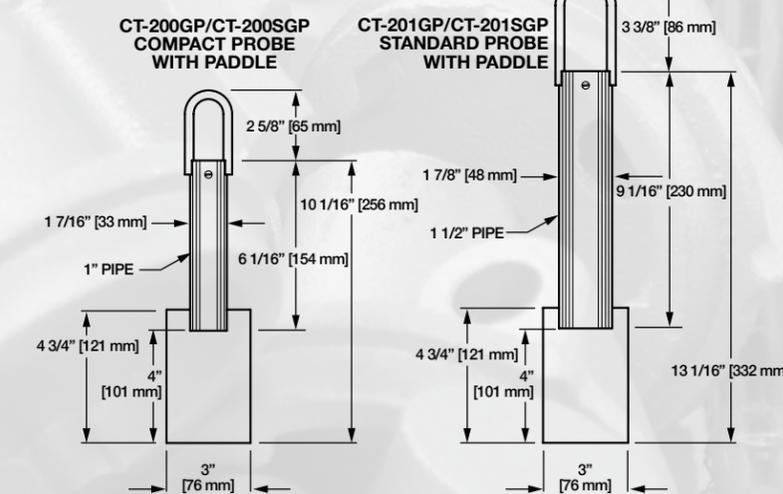
\*For Stainless Steel Probe add option "S" to Model number.

\*For welded Paddle add option "P" to Model number.

\*For High Temperature use CT-200GHC.

Tilt Probes are cULus Listed and Intrinsically Safe for Class I, Groups A, B, C and D; Class II, Groups E, F and G Hazardous Locations when connected to Conveyor Components Company's Control Units: Models CT-105, CT-106 or CT-107 with CT-300G Cable and when used as intended and installed according to manufacturer's instructions.

### PROBE DIMENSIONS: WITH WELDED ON PADDLE



## MODEL CT - ACCESSORIES

MODEL	DESCRIPTION	SHPG. WT. LBS
CT-300G	16-3 SO Probe Cable	0.09 lb./ft
CT-400	Probe Mounting Bracket	0.75
CT-500	S-Hook	0.5
CT-500S	Stainless Steel S-Hook	0.5
CT-600S	Stainless Steel 4" Diameter Float Ball	0.5
CT-700	Paddle Attachment Adapter	0.15
CR-61	4 Vane Stainless Steel Paddle	0.4
CR-64	Rubber Flexible Paddle	0.4
CR-65	Stainless Steel Flexible Paddle	0.5

## ACCESSORIES

