

Continuous Level Indicator System

Thermo Ramsey



C-LEVEL Controls

Thermo Ramsey's C-Level Indicator Systems

A low-cost continuous level indicator system for bins and vessels

CONTROLS

CL-100 Control

The CL-100 Control has been the mainstay of the C-Level System for over 15 years. Its simple operation and ease of calibration have made it a favorite with users worldwide. The microprocessor-based control uses input from up to 8 sensors to calculate and display the material level on an easy-to-read LED bar graph. The system is easily calibrated using the keypad on the front panel. Two different material levels are used to calibrate the system: one high point and one low point. The microprocessor does the rest. It automatically averages the outputs from the sensors and indicates the material level from 0-100%. High and low alarm set points are also adjustable from the keypad. There's even a fixed set point at 102% of bin capacity to indicate an overflow condition. And all the set up and calibration information is retained in a non-volatile EEPROM.



Model CL-100
Field Mount Control



Model DCLF-100
Field Mount Control



Model DCL-100
Panel Mount Control

Specifications

Enclosure: Styrene Plastic, IP-64 weather tight

Temperature Range: -10 to +50° C. Temperatures down to -40° C will not damage unit.

Power Requirements: Less than 10 watts, 120/240 VAC selectable, +10-15%, 48-62Hz

Outputs: Three (3) SPDT dry contacts rated 5A @ 250 VAC (low, high, overflow). Optional 4-20ma output proportional to level indication.

Display: Fifty (50) segment LED bar graph changes in 2% increments

Digital C-Level Controls

The Digital C-Level Control is a low-cost, microprocessor-based control with digital readout. The 16-digit alphanumeric display and membrane keyboard make set-up and calibration very easy. This highly flexible device will display weights in tons, pounds, grams, kilograms or percent. It can act as a simple batching control or as a weight transmitter with optional 4-20ma or RS 485 serial communications.

The Digital C-Level is available in either a compact panel mount DIN version (Model DCL-100) or in a field mount NEMA-4X version (Model DCLF-100).

Specifications

Enclosure: DCL-100 panel mount, DIN standard 144 x 72 mm, Front Panel IP-54. DCLF-100, Polycarbonate IP-65 (NEMA-4X)

Temperature Range: 0 to +40° C
Storage temperatures -20 to +70° C

Power Requirements: 110/220 VAC selectable, +10-15%, 50-60 Hz

Outputs: Four (4) SPDT, NO dry contacts rated 0.5A @ 240 VAC. Optional 0-20ma, 4-20ma, 20-0ma, or 20-4ma and RS 485 serial communication.

Display: LCD, 8mm height, 16 digit alphanumeric

Junction box with I-beam Thermo Ramsey's GZ-1 sensors are press fit into the support members. This type of mounting cancels temperature effects common to the "bolt-on" type of sensor.



INPUT SENSORS

Operation

The filling of any vessel or bin supported by metal members causes the supports to deform from the additional material weight. Although this deformation is so slight that it cannot be seen, it can be accurately measured by the GZ strain sensor. When installed, this stainless steel sensor actually becomes part of the support structure. The GZ-1's unique shape and full wheatstone bridge design cancels most of the effects of temperature changes. Once electrically excited, a change in the strain in a support member results in a proportional change in the output signal from the sensor. The GZ-1 sensor has been successfully applied in over 20,000 installations to I-beam, angle, pipe and skirted silo supports. It comes complete with an installation tool (Patent No. 4738135) for easy installation.

Specifications

Sensor: Hermetically sealed 304 stainless steel with PVC coated cable (1ft. or 31 ft.)

Temperature Range: -40 to +65°C

Output: 1mv/V excitation



GZ-1 Sensor

Thermo Ramsey's sensor design provides accurate measurement of strain in two directions. This design eliminates the need for multiple sensors on a single support member.

Tank Weighing Assemblies

Compression Tank Weighing Assemblies (TWA) are an option for the C-Level System. TWA's used in conjunction with the DCL and DCLF controllers can achieve accuracies of 0.5% or better.

The assemblies are available in sizes from 1,000 lbs to 300,000 lbs. They are self-checking, which eliminates the need for stay rod assemblies.

They feature 150% compression overload protection and can withstand 100% of their rated capacity in any direction, with a UBC-88 rating for Seismic Zones 1 through 4.



Tension S-Beam Loadcells

When weighing for level indication in hanging bins, such as day bins or ingredient bins, the C-Level System utilizes tension loadcells. These are available in capacities of 200 lbs to 20,000 lbs and can provide accuracies of 0.5% or better. The loadcells are rated for 150% overload and have normal deflections of 0.015" to 0.025" at full capacity.



Plastics • Asphalt • Paper • Power • Cement • Food • Chemical

Thermo Ramsey is recognized throughout the world as a leader in innovative weighing technology. Thermo Ramsey first introduced the C-Level continuous level indicator in 1986. Since that time, thousands of C-Level systems have been successfully applied in a variety of industries ranging from food processing to asphalt plants. With an accuracy $\pm 2\%$, the C-Level has proven itself to be ideally suited for inventory monitoring and process control. Unlike most level detection systems, the C-Level is not affected by uneven material discharge, build-up on sidewalls or bridging. Because the sensors are never in contact with the material, they can monitor the level of all materials - liquids, solids, even corrosive and volatile materials - without concern for on-going maintenance or failure.

The C-Level is available with a variety of controls and sensors to suit your specific application needs.



Cement



About us...

Thermo Ramsey was founded and incorporated in Minnesota in 1953. Headquartered in Minneapolis, MN, our companies are located in five European countries, Canada, Mexico, Australia and South Africa. Worldwide, Thermo Ramsey employs nearly 450 people.

In 1989, Thermo Ramsey established a Total Quality Management process. It achieved ISO 9001 International Quality Standards Certification in 1993.

Commitment to quality

To provide competitively priced, defect-free products and services that meet our customers' requirements by the promised delivery date.

Customer satisfaction

We are dedicated to the highest level of customer satisfaction and pledge continuous support in offering customized system solutions to our customers worldwide.

Our products

We manufacture weighing, control and monitoring products such as: belt scale systems, weighfeeders, automatic checkweighing equipment, metal detectors, coal and mineral sampling systems, level controls and a variety of other specialty control products.

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