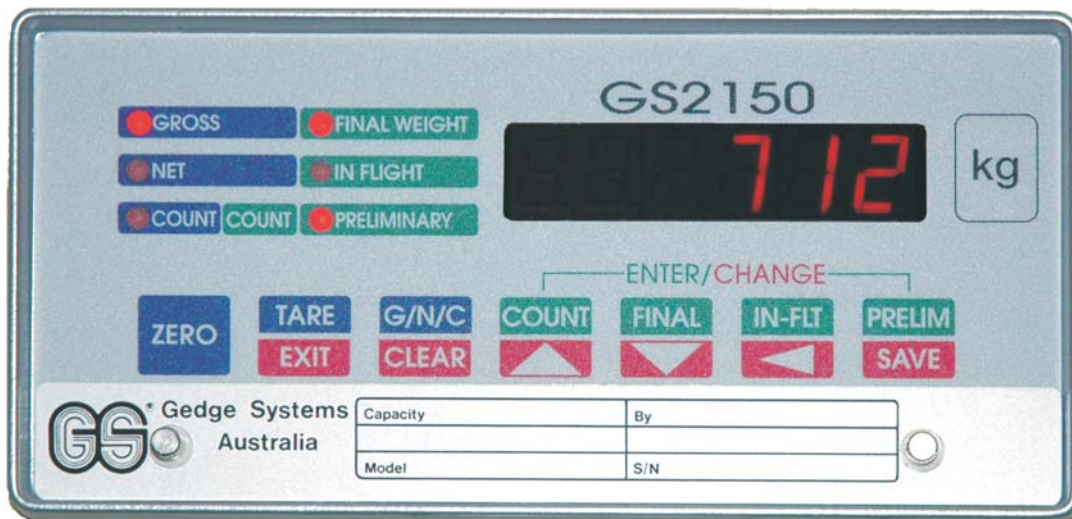# GS® Gedge Systems
Melbourne Australia

GS2150 Single Ingredient Self Contained FILL Controller for Bags, Boxes, Bottles - Anything!

KEY FEATURES

- Batches Powders; Liquids; Semi Solids; Potatoes; Fruits - anything that can be fed into a container.
- Batched weights can be a few GRAMS in sub gram increments all the way to many TONS in kg increments.
- The Complete Low Cost Automated batching solution - all batching logic is "built in".
- Add Load Cells, one or two Push Buttons as INPUTS, a 5VDC~24VDC Power Supply to operate your relays and contactors controlled by the GS2150 OUTPUTS and you are ready to fill bags, bottles, boxes - anything - easily!
- Easy to use. Entering weight settings is straightfoward using the GS2150's sensibly sized front panel layout with clearly labelled functions and logical operating procedure.
- Short 180mm rear projection including connectors enables fitment in standard 210 depth enclosures.

- Very easy to setup and calibrate. Weight calibration takes very little time and few steps - for ZERO key CAL then ZERO; for WEIGHT CALIBRATION apply a known weight key CAL then SPAN, enter the weight and the rest is FULLY AUTOMATIC.
- FOUR Optically Isolated Outputs rated 5VDC to 45VDC 1A for control of FAST & SLOW Speed Material Feeders, ZERO BAND & BATCH COMPLETE Indication. Outputs can directly operate most solenoids without external relays.
- FOUR Optically Isolated Inputs from your Push Buttons/Switches or PLC rated 5VDC to 24VDC for START, STOP, KEYBOARD LOCK and TARE functions.
- Every internal setting, function and operation of every GS2150 is 100% TESTED including THERMAL STABILITY over 0°C to 40°C.

GEDGE SYSTEMS - Since 1978 Australia's Leading Manufacturer of High Accuracy Weighing Electronics now bringing you Superior Quality GS-KMT Load Cells - visit www.gedgesystems.com.au or call for details.

APPLICATIONS

- Filling Machines for Sachets, Small Bags and Containers.
- Filling Machines for Sacks and Boxes of Potatoes, Fruits and Vegetables.
- Filling Machines for 20kg BAGS of Cements and other Powders.

- Batching IN or Batching OUT applications from large HOPPERS or BINS.
- Accurate DOSING applications.
- Anything that requires VERY ACCURATE batched weights. The GS2150's up to 800 sample per second rate ASSURES HIGH ACCURACY.

The ONLY essential external controls needed to operate the GS2150 are TWO N/O Pushbuttons. A START and a STOP. A LOCK Input and a HOLD Input can be used if needed.

The GS2150 has FOUR Outputs. TWO drive the material FEEDERS - SLOW SPEED and HIGH SPEED. Often only ONE is used - SLOW SPEED. The other TWO outputs for ZERO BAND and BATCH COMPLETE are there if required.

The figure on the right shows one example of the many types of batching cycle the GS2150 can be setup to perform. In this example, the GS2150 has been programmed to Batch material IN {into a bag from a bulk container} by NET weight and to automatically acquire tare {to cancel out the weight of the bag} when the Batch START input BUTTON is operated. The GS2150's Automatic In-Flight compensation adjustment is set ON with an adjustable settling time of 2 seconds. {It waits 2 seconds before changing the BATCH COMPLETE output}
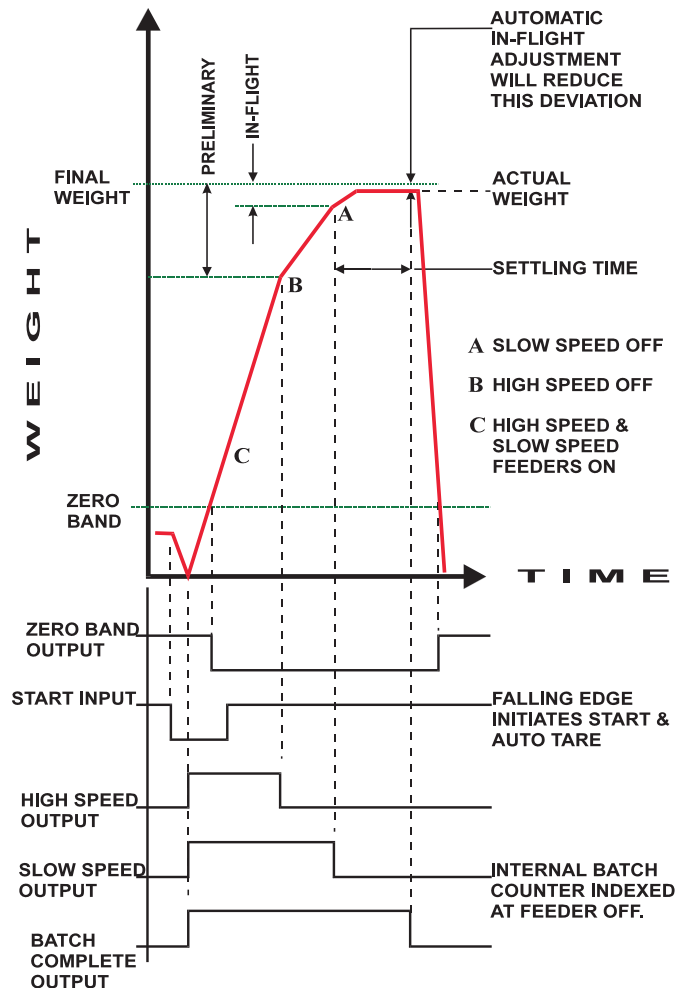
The BATCH CYCLE commences with the BAG being placed on the SCALE and due to its weight, the GROSS weight is not ZERO.

The remote START input is pressed {closed}.

The GS2150 then automatically tares the BAG'S weight {the Gross weight} to obtain a NET weight of ZERO. After this, both MATERIAL FEEDER OUTPUTS and the BATCH COMPLETE OUTPUT are turned on.

[Figure - batching cycle diagram]

Labels: AUTOMATIC IN-FLIGHT ADJUSTMENT WILL REDUCE THIS DEVIATION; PRELIMINARY; IN-FLIGHT; FINAL WEIGHT; ACTUAL WEIGHT; A; B; C; SETTLING TIME; ZERO BAND; WEIGHT; TIME; A SLOW SPEED OFF; B HIGH SPEED OFF; C HIGH SPEED & SLOW SPEED FEEDERS ON; ZERO BAND OUTPUT; START INPUT; FALLING EDGE INITIATES START & AUTO TARE; HIGH SPEED OUTPUT; SLOW SPEED OUTPUT; INTERNAL BATCH COUNTER INDEXED AT FEEDER OFF.; BATCH COMPLETE OUTPUT

Material is then fed at a rate controlled by both feeders. While the weigh hopper (or bag) is being filled, the GS2150 compares the actual weight with the target weight settings at a rate up to 800 times/second using the GS2150's linear predictive modelling.

When the "Final weight minus the Preliminary setting" is reached the HIGH SPEED FEEDER OUTPUT latches off. Feeding continues at the SLOW SPEED feeder rate until the "Final weight minus the In-Flight setting" is reached, when the SLOW SPEED FEEDER OUTPUT latches off. The GS2150's internal BATCH COUNTER is then incremented by one and the adjustable settling time interval of 2 seconds commences. After this time interval, the GS2150 makes any necessary AUTOMATIC IN-FLIGHT COMPENSATION ADJUSTMANTS and latches the BATCH COMPLETE OUTPUT off to signal the end of the batch. The hopper or bag can then be discharged and a new batch started using the ZERO BAND OUTPUT to detect the empty condition.

Specifications

LOAD CELL INPUT. -1mV to 30mV; to 10,000 divisions by 1µV~75µV/divisions. Displays -4% to +104% FS range. Excitation 10VDC 230mA Short Circuit Protected. True differential remote sensing using a separate pair of wires.

ACCURACY & STABILITY. Linearity <±0.01%FS; Span Stability <30ppm/°C; Zero Stability <±0.5mV/°C ±30ppm/°C of dead load offset; Noise 1µV p-p RTI maximum. Active 2Hz 2 Pole Low Pass Analog Filter plus Digital Filtering via selective A/D averaging.

FRONT PANEL. SIX digit 14mm 7 segment High Intensity red LED display to a maximum of 199990 plus SIX LED lamps. Positive action tactile feedback keyboard behind tough water resistant membrane.

FOUR CONTROL OUTPUTS. Fast and Slow Speed feeder control, Batch Complete and Zero band. Optically isolated open collector capable of sinking 1Amp 5VDC to 45V DC from a user's DC power supply.

FOUR CONTROL INPUTS. Tare, Keyboard Lock, Stop and Start. Optically isolated input with internal 2.2kOhm current limiting resistor. The user's 5VDC to 24VDC power supply is sunk through the user's controls.

PHYSICAL/ENVIRONMENTAL. All metal panel mounting enclosure including panel mounting slides. Front panel 198mm wide x 96mm high; Body 184mm wide x 90mm high x 150mm long. Panel mounting DIN standard cut out 186mm wide x 92mm high. Panel rear projection 170mm including connectors. Shipping weight 3kg. Environment -10C to + 40C Operating; -15C to + 70C Storage; to 95%RH non condensing. Normal power 240VAC ±10% 49~62Hz 15VA. Rear Panel includes Power cable receptacle, Fuse & fuse holder, 9 pin D load cell connector and 10 pin removable screw terminal block for control Input/Output connections.

OPTIONS:- BR1 Factory fitted battery backed memory to save batch counts, tare weight, adjusted In-Flight setting, "memorized" batched weight and zero tracked value on power failure. Not required to save all other settings; **TOTALS/BR1** same as **BR1** BUT includes NINE digits of stored Material Usage and Batch Count.

ORDERING GUIDE. Order GS2150 Batch Controller. Specify mains voltage and, if required **Option BR1** or **TOTALS/BR1.** All connectors and mounting hardware are supplied as standard.