EMC Belt Weigher Systems

Accurate Flowrate Measurement of Bulk Material on Belt Conveyors

AUTOMATION & CONTROL®

ROBOTICS > DRIVES > SYSTEMS

EC 13722

EMC

EMC Industrial Group
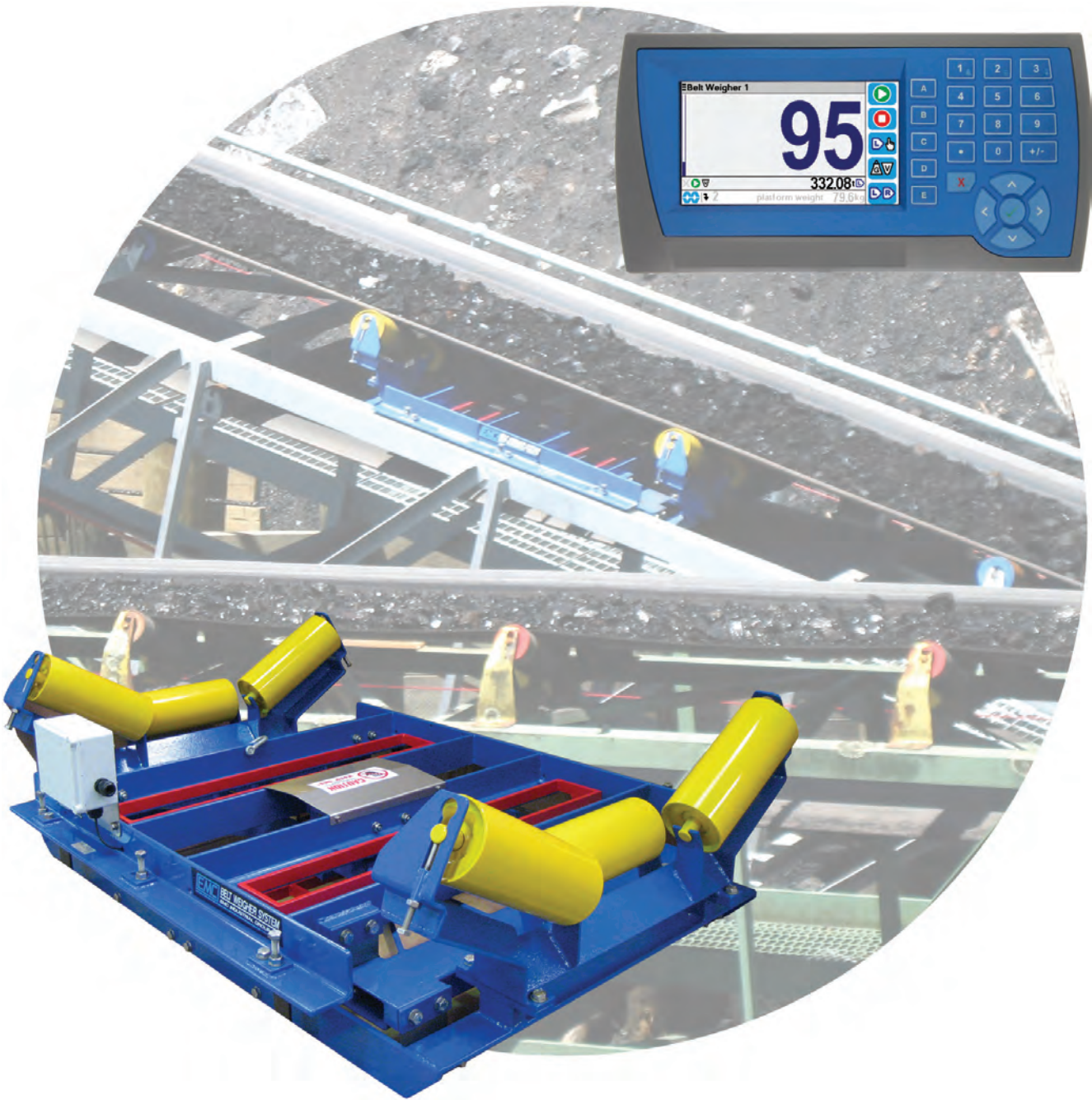
EMC Belt Weigher Systems

Our Belt Weigher Systems provide a simple and accurate way to measure the flowrate and total tonnage of bulk material passing along a conveyor belt.

A system includes:
- Single, Dual or Multi Idler Belt Weigher, with integrated loadcell/s to measure the load
- Tacho Assembly to measure belt speed
- ModWeigh MW95A Processor to calculate flowrate (t/hr), totals, etc

Proven experience

We manufactured our first Belt Weigher in 1973 and have since supplied over 500 throughout New Zealand and worldwide. This wealth of practical experience provides you with a mechanical design and rugged construction that has been proven in many industries and applications.

An essential component of any weighing system is a reliable and economic processor. We have designed and manufactured Weighing Processors for almost 40 years and our ModWeigh Series is recognised internationally for its quality and ease of operation.

Our experienced staff and fully equipped workshops ensure that full local back-up and service is provided throughout New Zealand.


Wood Chip Conveyor

Belt Weigher applications

If your industry is mining, quarrying, cement, fertiliser, chemical, steel, timber, food processing, etc, then Belt Weighers are probably used somewhere in your production or inventory processes.

Some of the diverse products that we have accurately measured with our Belt Weighers include fertiliser, coal, sand, iron sand, aggregates, wood fibre, wood chips, vegetables, tobacco, detergent powder, etc.

Belt Weighers are generally used for:
- Bulk inventory control
- Bulk material measurement
- Production rate measurement
- Production totals
- Continuous blending systems
- Flow control and blending
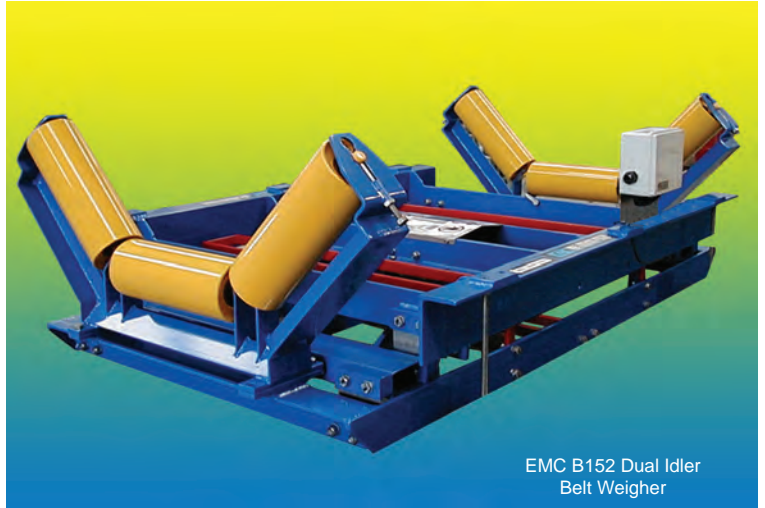
EMC B152 Dual Idler Belt Weigher

EMC Dual Idler Belt Weigher

Our B152 dual idler Belt Weighers provide the best accuracy (typically 0.5% or better) and consist of two idler sets mounted on a precision flexure weigh frame.

Multiple stainless steel flexures transfer the load from the idlers to a centrally mounted waterproof loadcell. The total movement of the lever arms and loadcell is less than 0.05mm, so in effect there are no moving parts.

Due to the construction of the scale section, counterweights may be used to cancel out the deadweight of the idlers and the belt, enabling reliable weighing of products with low bulk density.

Rugged industrial construction

The frame is ruggedly designed and constructed to withstand years of heavy duty industrial use. A variety of materials and finish are available to suit most environments including powder-coated steel, galvanised or stainless steel. The frame is designed for direct mounting to existing conveyor stringers.

The loadcell is fully overload protected by precision stops and travel screws provide protection during transportation.

Coal Mining Installation

EMC Single Idler Belt Weigher

Our B150 Belt Weigher is a single idler type unit designed for simplicity, durability, and ease of installation with direct mounting to existing stringers.

The complete unit is low profile and therefore causes no interference with the returning belt underneath.

EMC B150 Single Idler Belt Weigher

The B150 provides the highest accuracy possible for a single idler belt weigher - generally in the range of 1-2%.

Construction materials and finish are the same as the B152 to provide you with years of rugged use. Modified idlers are supported directly on 1 loadcell giving excellent weighing accuracy from a simple, reliable device.

Tacho Assembly

As standard, a complete tacho assembly with rotary encoder, swivel arm and trailing wheel is provided with each Belt Weigher to measure the belt speed. This bolts to the belt weigher frame and runs on the return belt.

B150 Belt Weigher for flat belts

EMC Belt Weigher features

- Dual idler for high accuracy (better than 0.5%)
- Single idler for compact design and simplicity
- Powder coated steel, galvanised or stainless Steel construction
- Rugged construction for harsh environments
- Direct mounting to existing stringers
- Stainless steel fasteners for long life
- ModWeigh control instrumentation
- Suitable for flat or troughed belts
- Suitable for level or inclined belts
- Custom made to suit any belt width
- Overload protected
- Made in New Zealand with full local support

Enclosed installation on train loading coal conveyor

New B152 installation on coal conveyor

Single Idler B150 Belt Weigher on aggregate conveyor

Four Idler Belt Weigher on wood chip ship loading conveyor

EMC ModWeigh MW95A Belt Weigher Instrumentation

Our unique ModWeigh Series of Continuous Weighing Processors, with separate transmitter and display, utilise digital technology to provide you with a modular system that is highly accurate, cost-effective and easy to use.

ModWeigh MW95A is specifically designed for belt weigher applications where the purpose is to process the flowrate measured by EMC Belt Weighers.

Each MW95A ModWeigh Belt Weigher package includes a Transmitter and Display together with a variety of accessories and options (e.g. rugged field mount housing):

Digital Transmitter

MT6 transmitters are the most commonly used for belt weighing applications.

The transmitter incorporates a plug-in module that determines the function (e.g. Belt Weigher) and holds calibration settings, etc. Calibration is achieved using the MW99 display via an easy to use menu.

Mounted in either DIN Rail or IP67 Field Housings, they are 12-24Vdc powered with excitation supply for the loadcell(s) and tacho.

Modbus communications, one analog output and auto zeroing are standard features on the MT6. The MO2 option provides additional analog I/O if required.

The MT6 transmitter includes 4 digital Input and 4 digital Output user-programmable functions.

Graphics Display

The MD1 ModWeigh Indicator is panel mounted (208 x 104mm facia), 24Vdc powered and features a colour graphics LCD display with an easy to use menu selection.

The MD1 Indicator displays flowrate, total weight, belt speed, alarm status, bargraphs, etc. Display items can be added or removed as required.

A single MD1 can calibrate several Transmitters.

Instrumentation can be mounted in robust, fully wired enclosures (as shown right) - just let us know your requirements.

Installation, Commissioning and Service

We can arrange installation and commissioning of your new Belt Weigher System to ensure optimum performance.

Our Service Engineers regularly travel throughout New Zealand and can provide service reports, maintenance checks and calibration on all our Weighing Equipment.

ModWeigh MW95A features

- Flowrate measurement for belt weighers
- Programmable 4-20mA flowrate output
- Material totaliser
- Platform weight output (with MO2 option)
- Setpoint input (with MO2 option)
- Programmable digital inputs and outputs
- Graphics LCD display with membrane keypad
- Field or DIN rail mounting transmitter
- Modbus comms (independent RS232 & RS485 ports)
- Automatic zeroing
- Time and date clock for printouts
- Alarm function
- Batching feature
- Field software upgrades

Questionnaire

As our Belt Weighers are custom designed to suit each individual application, a completed Questionnaire is required to allow us to quote and/or commence manufacture. The Questionnaire includes details such as conveyor design, product characteristics, belt width, idler spacing, construction materials, etc.

Please contact our experienced staff to discuss your application and obtain a copy of the questionnaire. Alternatively the questionnnaire can be downloaded from our web site: www.emc.co.nz/downloads

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