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[Data Weighing Systems, Inc.](#)

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For immediate assistance call
1-800-750-6842

SPECIFICATIONS

WEIGHING PERFORMANCE

- Resolution 100,000d (+/-500,000 internal)
- A/D Conversion 60Hz
- Calibration Selectable, 5 point linearization or enter loadcell mV/V Full Scale
- A/D Filtering GSE FIR (Finite Input Response) Filter with selectable display rate update
- Units of Measure Programmable, user defined
- Zero Adjustment Selectable, 0.01 – 100% Full Scale
- Span Adjustment 0.1 – 20mV/V
- Non-Linearity 0.005% Full Scale, L.C. dependent
- Operating Temperature -10°C - +40°C
- Excitation Power 14 – 350 ohm bridges
- Input Signal Connections 4 or 6 conductors with sense leads
- Excitation Current 400 mA, short circuit protected
- Excitation Voltage 10VDC, short circuit protected
- Time/Date Clock Real-time clock
- Warranty 2 Year

ELECTRICAL

- Power Input AC – 90 - 250VAC @ 50/60Hz, DC – 10 - 32VDC
- Fuse 0.8A Slo-Blow
- DC Output +5VDC, +24VDC

PROCESS CONTROL

- I/O Scan Rate 16ms maximum
- Number of I/O 128 combination, input and output
- Maximum Voltage Ratings 3 VDC – 200 VDC @ 2A, 24VAC – 250 VAC @ 1A or 24VAC – 250VAC @ 3A
- I/O Timer Resolution 10ms
- PDIO Frequency 8Hz – 100KHz
- PDIO Voltage 5VDC
- Program Timer Res. 2ms up/down
- Counter Input Freq. PDIO 8Hz – 100KHz

COMMUNICATIONS

- Port 1 RS232 Full Duplex or RS485 Multi-drop optional or 20mA current loop optional
- Port 2 and 3 RS232 Full Duplex
- Port 4 RS232 Full Duplex or TTL interface to 4x20 VFD
- Protocols Modbus™, Device Net™, Profibus®, Ethernet
- Baud Rates 150 – 115K bps

OPTIONS AND ACCESSORIES

- **Multi-Scale Module** - additional signal inputs, total of 8
- **Analog Output Module** - 16 bit signal output, 0-10VDC, 0-20mA or 4-20mA, software adj. zero/gain, total of 8
- **Database Module** - 256K, 1M, or 2M Byte
- **RS485 Module** - isolated multi-drop w/ 251 devices max, half or full duplex up to 4000 feet, 115K bps max
- **I/O Module** - AC/DC @ 1-3A, optically isolated.
- **Alpha Keypad** - elastomeric, available on the 663 only
- **SCR Module** - max. load 1.75A RMS, 20-280VAC, 50/60Hz
- **GSE Reflash** - download firmware revisions and compiled 'C' code via RS232 or BDM port
- **GSE User C Development Kit** - write, compile, emulate in 'C'
- **20mA Current Loop** - isolated TX-active or passive, RX-passive, 9600 bps max, 12VDC, 1000 feet
- **DeviceNet™** - ODVA approved interface module for fieldbus networking
- **Profibus®** - PTO approved interface module for fieldbus networking
- **Ethernet** - Communicate via intranet or internet connection

Model 660/661/662 Universal Mount and Panel Mount

- Enclosure: All Models, Stainless Steel, NEMA 4X (IP66) Design
- Dimensions: Universal Mount - 11.01"W (27.98 cm) x 8.96"H (22.76 cm) x 3.70" D (94.0 cm)
Panel Mount – 9.88"W (25.10 cm) x 8.88"H (22.56 cm) x 3.90" D (9.90 cm), Panel thickness 0.45" D (1.13 cm)
- Display: 660 - Vacuum Fluorescent Display (VFD), 6 digit 0.75" (19 mm) with 2x5 matrix
661 - Vacuum Fluorescent Display (VFD), 0.31" (8 mm), 4 line x 20 character
662 - Liquid Crystal Display (LCD), 8 line x 40 character backlit, 3 font sizes

Model 665 Universal Mount and Panel Mount

- Enclosure: Stainless Steel, NEMA 4X (IP66) Design
- Dimensions: Universal Mount – 11.01"W (27.98 cm) x 12.10"H (30.73) x 4.07" D (11.94)
Panel Mount – 10.25"W (26.04 cm) x 11.90"H (30.23) x 4.02" D (10.21 cm), Panel thickness 0.45" (1.13 cm)
- Display: 2 available display choices, VFD, 6 digit 0.75" (19 mm) with 2x5 and 4x20 0.31" (8 mm) or LCD, 16 line x 40 character backlit, 3 font sizes

Model 663 Machine Mount or Wall Mount

- Enclosure: Mild Steel – Powder Coat, NEMA 12 Design
Stainless Steel – NEMA 4X Design
- Dimensions: 16.16"W (41.10 cm) x 22.50"H (57.15 cm) x 9.20" D (23.38) or Mild Steel 24" x 30"
- Display: 2 available display choices, VFD, 6 digit 0.75" (19 mm) with 2x5 and 4x20 0.31" (8 mm) or LCD, 16 line x 40 character backlit, 3 font sizes

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|------------------|-------------|-------------------|
| Shipping Weight: | 660/661/662 | 7 lb (3.18 kg) |
| | 663 | 47 lbs (21.32 kg) |
| | 665 | 13 lb (5.90 kg) |

Your GSE Distributor:



SPX Corporation
42860 Nine Mile Road
Novi, Michigan 48375-4122
Phone 248-596-0600
Fax 248-596-0601
Toll Free 800-755-7875

In Canada: 403-948-9921
Website: www.gse-inc.com
Email: gsesales@gse-scales.spx.com





Expect more

from your weight-based controller.

In today's fast paced business climate, the need for versatile weighing control is mission critical. The 660 Series delivers versatility with an intuitive design and operation combined with the most flexible parameter architecture in the industry. The innovative features in all 660 Series controllers were developed through years of design and application experience ranging from dynamic axle weighing to complex process control.

660 Series



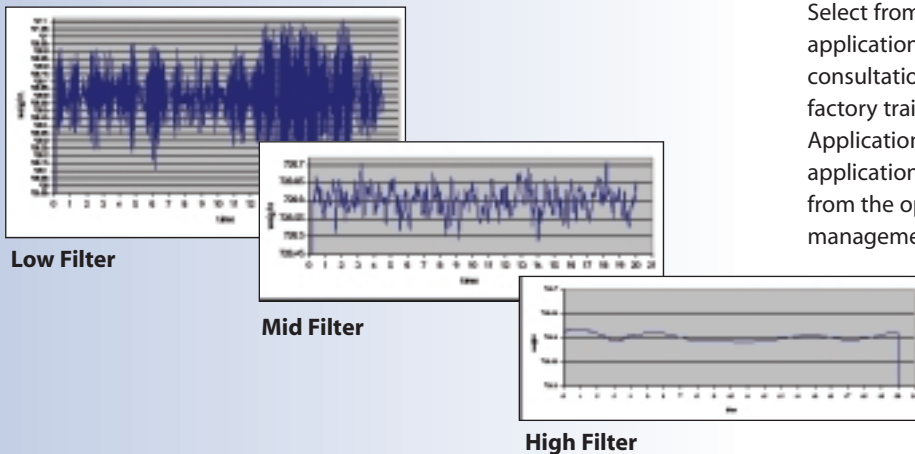
Worldwide Metrology Certification and Electrical Approvals

Tested to the world's toughest standards, the 660 Series was designed and is manufactured to pass worldwide Metrology (legal for trade) and Electrical approvals. In legal for trade applications, up to 8 scale inputs can be monitored individually or simultaneously with each scale having multiple weight accumulation registers.

Accuracy is the critical component in weighing applications.

In many applications, precise weight data is critical to control material variances and maintain accurate inventory levels. Our unique digital FIR Filter (Finite Impulse Response) provides accurate and repeatable force measurement in static and dynamic weighing applications.

Progression of 3 Filter Selections



Configuring a controller to fit your application is as easy as 1, 2, 3.

1st the Enclosure

The 660 series provides 3 enclosure styles to meet your specifications:

- **Panel Mount** enclosures mount virtually flush to the panel with only a 0.3" profile.
- **Universal Mount** enclosures include a swivel mount suitable for wall, machine or desktop applications.
- **Large Machine or Wall Mount** enclosures allow for mounting peripheral control devices.

2nd the Display

An efficient operator interface starts with the display. Five LCD and VFD display selections offer flexibility for basic or complex process applications.

3rd the Application Program

Select from common turnkey applications in our resident application library or contact your local GSE Distributor for consultation on your application. GSE Distributors receive factory training and are supported by a professional staff of Application Engineers to mold the 660 Series around your application. Every detail of the 660 Series is programmable from the operator prompts, timers and alarms to database management.

Communicate with printers, computers, scanners, displays and other peripherals.

Four (4) bi-directional serial ports transmit up to 250 data output formats. These formats provide the ability to transmit exactly what you need to ticket printers, bar code printers, report printers, remote displays or computers. The transmitted data can include weight information, process parameters and information to the bit level if required.



Process incoming serial data received from a computer, scanner or similar device with the Input Interpreter Tables. These tables store the received data in the appropriate register(s) and can be used to trigger an event driven process.

Network Fieldbus interfaces provide open architecture connectivity.

The Ethernet Interface Module (EIM) allows communication with any 660 Series controller across an Intranet or Internet connection. The EIM supports DHCP servers or fixed IP addresses and Telnet protocol with selectable port address, programmable connection and override time.

The DeviceNet™ Module provides connection on the network device layer in a trunkline configuration. Resident I/O assemblies are easily setup to satisfy many application requirements. Explicit messaging is supported.

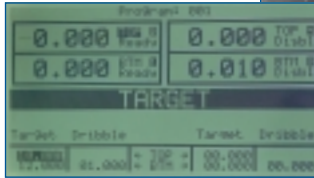
The Profibus® Module allows the 660 Series to serve as a slave on the network line.



ETHERNET

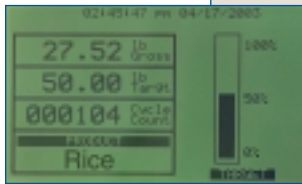
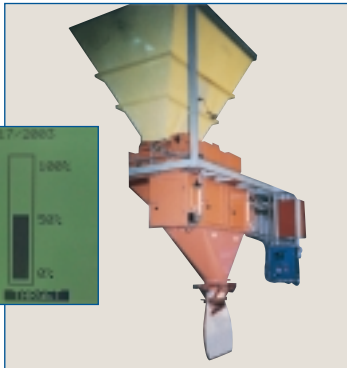
Batching and Filling Systems

Text messaging and graphics give a quick visual reference as the scale approaches the target. This application displays the ingredient number, description with actual weight and target weights. Timers and counters can be easily configured to monitor mixing time or auger revolutions.



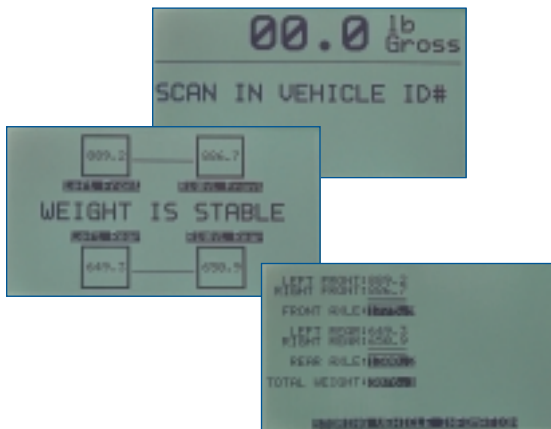
Packaging and Bagging Systems

When material throughput is critical and product changes frequent, material flow characteristics and vibratory feeder settings can be recalled to reduce down time. Automatic material free fall calculations adjust vibratory feeder rates to compensate for the change in head pressure as supply hopper levels change.



Vehicle Weighing Systems

Axle weighing and truck weighing are applications well suited for the 660 Series. This application illustrates 4 scale platforms connected to a 665 controller. The individual wheel weight front axle weight, rear axle weight, right weight, left weight and the center of gravity are calculated for the vehicle and stored in the database.



Standard Features

- **Data Management** – 250 Databases with 98 columns each support 18 functions to manage application data
- **Variable Registers** – 999 variable registers are application defined as strings, integers, unsigned integers and floats. Registers are labeled based on your application. Example: Part Number, Lot #, Sum of Platforms, Timers, etc.
- **Programmable** – customize the 660 Series to your application requirements with the GSE Macro language or GSE User 'C'.
- **Process Control** – 128 I/O points with 20 activation and deactivation conditions.
- **PDIO** – 8 Programmable Digital Input Output channels generate and receive frequencies from 8Hz to 100KHz or can be configured as open collector digital input and output channels. PDIO compatible devices include:
 - Vibratory Feeders
 - Quadrature Encoders
 - Flow Meters
 - Remote Key Inputs
- **Configuration and Calibration** – configure and calibrate your controller through the keypad or serial communications
- **Factory Application Files** – turnkey application files are resident in Flash Memory
- **System Diagnostics** – extensive diagnostic parameters are available to verify accurate system operation.
- **Elastomeric Keypad** – our exceptionally durable rubber keypad provide standard scale functions and can be remapped or disabled for convenience and security
- **Operator Interface** – an unrestricted number of operator prompts and display screens can be programmed for your application.
- **Flash Memory** – the latest Firmware upgrades are simple with GSE Reflash and optional BDM Reflash.

Checkweighing Systems

Dynamic checkweighing and grading systems utilize the I/O activation and deactivation conditions to control processes both physically and conditionally. The operator can view any programmed data screen during the process.

