

60 Series



Weight-Based
Indicators & Controllers



Flexible legal-for-trade weighing solutions.

To stay competitive, the industries of today are fast-paced and lean. They require equipment that provides intuitive operation for personnel at all skill levels. Our 60 Series line of programmable instruments deliver exactly that with 3 levels of sophistication. The unique combination of automation technology supported by a worldwide network of factory trained Distributors make it simple for you to tailor a 60 Series Instrument for an infinite range of applications.

Increase your process efficiency by improving accuracy. Our line of programmable instrumentation has helped people in nearly every industry improve weighing accuracy, and, ultimately, their bottom line. GSE is dedicated to providing the most flexible, highest quality weight-based products for demanding applications, anywhere in the world.



Connectivity - Integrate weight and process data into your network.

The 60 Series versatile communication protocols talk to devices via point-to-point communications or using standard industrial fieldbus networks that provide the ability to exchange plant floor data in a variety of formats. This is of particular value to facilities and integrators that require communication options for a variety of machines and applications. Since the 60 Series Controllers use common communication modules and programming utilities, users reduce integration time and maintenance costs.

RS232, RS485 and 20mA Current Loop

- Rabbit™ Software provides the ability to quickly customize incoming and outgoing data transmissions to virtually any peripheral device.
- Each independent Custom Transmit Table™ is easily configured to transmit weight data and process data to virtually any printer, computer, remote display or other device. These tables allow data formats, control codes and data strings to be customized for each application.
- To start a process or display a message upon receiving a character or data string, the Input Interpreter Table™ is programmed to analyze the incoming data and process it accordingly. The received data is normally transmitted from a computer, scanner or card reader to start an application or the received data is stored in specific data registers for future processing.

Ethernet Module

- When communicating across an Intranet or Internet connection, the Custom Transmit Tables™ and Input Interpreter Tables™ provide the ultimate flexibility for system integration. These features permit the user to configure the weighing instrument to communicate in their network.
- The IP setup tool quickly establishes a static IP address or DHCP server compatible.
- To expedite setup, a dynamic on-board web server makes network configuration fast and simple.
- The Ethernet Module provides instant access to view the scale weight and process data remotely.
- Communicate via Telnet server or client, FTP client and Modbus TCP/IP protocols.

DeviceNet™ and Profibus® Modules

- Flexible I/O assemblies provide access to all weight data and user defined process data.
- An on-board auto configuration utility expedites setup by matching both EDS and GSD files.



460 Series Indicators

For applications that require an elevated level of flexibility over elementary weighing indicators, the Model 460 and 465 are the perfect entry-level programmable indicator.

- Programmable in 'C' or with Rabbet™ Software
- 15 Variable Data Registers
- 2 Scale Input Signals
- 4K Byte Database Memory
- 8 I/O, Variable Activation and Deactivation States
- 15 Independent Programmable Database Structures

560 Series Indicators

When your applications require a more sophisticated operator interface and process control capability, Models 560 and 562 deliver enhanced performance and value.

- Programmable in 'C' or with Rabbet™ Software
- 100 Variable Data Registers
- 4 Scale Input Signals
- Database Memory expandable to 256K
- 32 I/O, Variable Activation and Deactivation States
- 100 Independent Programmable Database Structures



660 Series Controllers

For the ultimate level of flexibility and process control, the Model 660, 661, 662, 663 and 665 are specifically designed to meet the most demanding applications. Three enclosure configurations and 5 display choices allow you to select the operator interface and controller to best suit your application requirements.

- Programmable in 'C' or with Rabbet™ Software
- 999 Variable Data Registers
- 8 Scale Input Signals
- Database Memory expandable to 2M
- 128 I/O, Variable Activation and Deactivation States
- PDIO, Programmable Digital Input & Output, controls up to 7 vibratory feeders, accepts input from flow meters and encoders
- 250 Independent Programmable Database Structures

The complete line of 60 Series Instruments, with progressive levels of performance, allow you to select a Model that best fits your requirements. Whether you're on the farm or in a processing plant, our instruments are built and tested to withstand the most severe environments while delivering precision weighing accuracy.

60 Series Standard Features

Data Management

Use Rabbet™ Software or User 'C' to define database structure. The database is then managed using the 18 available functions that include; Create, Delete, Recall, Sort, Upload and Download to name a few. The independent databases are specifically useful for applications that recall information from one database and require the transaction or process data to be recorded in a separate database file.

Variable Data Registers

No application is identical. For that reason, user defined Variable Data Registers (VDR) can be setup as alpha-numeric strings, floats, integers and unsigned integers with variable character length. Label names for VDR's are infinite so you are only limited to your application requirements and your imagination when configuring the VDR's.

Flash Memory Updates

As new features are added to the firmware, your instrument can be updated with the latest enhancements using GSE Reflash Software. Application files can also be transmitted over any communication connection including Ethernet for installations with multiple instruments in various locations.

Turn-Key Applications

Common weighing applications such as Batching, Checkweighing, Discharge, Filling and Truck In/Out are resident in the instrument's memory. These full featured applications can be easily modified to better accommodate your needs or a custom program can be written by factory trained Distributors.

Operator Interface (OI)

Intuitive equipment operation is important for improving production efficiencies. To guide operators through a series of tasks, custom displayed prompts are easily programmed using Rabbet™ Software or User 'C'. To further improve the OI, key functions can be defined to perform a single task or execute multiple tasks with a one keystroke.

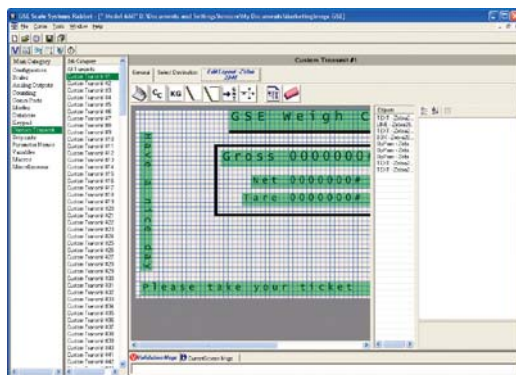
The User 'C' advantage.

User 'C' maximizes capabilities and reduces development time by allowing application developers the ability to write and compile routines in the 'C' programming language. This capability provides the execution speed and flexibility required in many processing applications.

- **Execution Speed:** The compiled 'C' code executes faster than interpreted code.
- **Extensive Function Library:** The standard 'C' library and an extensive list of functions are provided to assist in integrating the intended application with our existing firmware routines.
- **Quick Results:** The only source code you write is specific to the application routines required to control the specific process and operator interface.
- **Security:** The final compiled output object code file is the only file put into the field. The source code remains secure.
- **Flexibility:** User 'C' provides standard weighing features that link to your custom application source code. For example, an application can send out data by formatting the transmission and calling a User 'C' library function. Similar degrees of freedom apply to the processing of received data, use of databases, process control functions, and other aspects of the instrument operation.
- **User 'C' Development Kit Tools:**
 - GSE User 'C' Function Library
 - GNU Compiler
 - Insight GDD Windows® Debug Utility
 - Emulation Memory Module
 - BDM Interface Cable with High Speed Extension Cable

This is no ordinary Rabbet.

Rabbet with an 'e' means to join together. Join your application vision with reality using Rabbet™ Software, a Windows® based graphical user interface designed to expedite development. This intuitive software guides you through the general instrument setup parameters and more advanced program development.



Options

Multi-Scale Module - Add additional scale input signals

Analog Output Module - 0-10VDC, 0-20mA or 4-20mA, absolute zero and full scale values are programmable, 16 bit resolution

Database Modules - three modules provide 256K, 1M or 2M byte of additional database memory for data management

RS485 Module - multi-drop up to 251 devices in half or full duplex to a distance of 4000 feet (1200m), replaces RS232 Port 1

I/O Relay Modules - optically isolated, 20-240 VAC & 3-60 VDC Input and Output Modules, 1-3A rating

20mA Current Loop - TX active or passive, RX-Passive, 9600bps, 12VDC, 1000 feet (300m), replaces RS232 Port 1

SCR Module - vibratory feeder control, 1.75A RMS maximum load, 20-280VAC, zero cross detection

User 'C' Development Kit - includes all software and hardware required to write applications in 'C'

Rabbet™ Software - Windows® GUI used to configure the instruments and program in the GSE Macro Language

Device™, Profibus®, Ethernet Modules - provides fieldbus communications

Dura-Shield & Splash Guards - keeps the instrument clean in dirty environments

Excitation Current Booster - boosts excitation power on 660 Series Controllers to operate a total of 32-350 ohm load cells

Specifications

	460 SERIES	560 SERIES	660 SERIES	
PERFORMANCE	Resolution	1,000,000d internal, 100,000d displayed		
	Filtering	Finite Impulse Response filter, filters system vibration and motion		
	Units of Measure	4 user selectable per scale (lb, kg, g, oz, ton, t)		
	Custom Units	2 user defined custom units with conversion tables (ie. pennyweight, carats, gallons, widgets)		
	Signal Input Range	0.1 - 20 mV/V		
	Operating Temperature	-10° to 40° C (14° to 104° F)		
	Warranty	2 year limited		
	Time/Date Clock	Non-volatile with selectable formats		
	Database Memory	4K standard	4K standard, expandable to 256K	4K standard, expandable to 2M
ELECTRICAL	Power Requirement	AC: 90-250 VAC, 50/60 Hz; DC: 10-32 VDC		
	Excitation Voltage	10 VDC short circuit protected; 340 mA, max to power (12) 350 ohm load cells	10 VDC short circuit protected; 400 mA, max to power (14) 350 ohm load cells	10 VDC short circuit protected; 400 mA, max to power (14) 350 ohm load cells expandable to 32
	Signal Connection	4 conductors or 6 conductors with sense leads		
SET POINT I/O	Number of I/O	8	32	128
	Dry Contact Inputs	2 momentary contacts, programmable	2 momentary contacts, programmable	8 momentary contacts, programmable
	PDIO Frequency/Voltage	N/A	N/A	8Hz - 100KHz; 24 VDC
COMMUNICATIONS	Port 1	RS232 Full Duplex or RS485 Multi-drop optional or 20mA Current Loop optional		
	Port 2	RS232 Full Duplex		
	Port 3	N/A	RS232 Full Duplex	RS232 Full Duplex
	Port 4	N/A	N/A	RS232 Full Duplex or TTL interface to 661, 663, and 665 only
	Protocols	Modbus™ RTU, ASCII. Optional: DeviceNet, Profibus, Ethernet (HTTP, Telnet, FTP, Modbus TCP/IP)		
	Custom Transmit Tables™	4	100	250
	Input Interpreter Tables™	15	100	250
	Baud Rate	150 – 58,300K bps	150 – 58,300K bps	150 - 115K bps
DISPLAY	VFD, 6-digit, 0.75"(19mm) w/2x5 dot matrix	460, 465	560	660
	VFD, 4 line x 20 character dot matrix, 0.31"(8mm)	N/A	N/A	661
	VFD, 6-digit, 0.75"(19mm) w/2x5 dot matrix combined with 4x20 VFD	N/A	N/A	663, 665
	LCD, graphic 8 line x 40 character backlit	N/A	562	662
	LCD, graphic 16 line x 40 character backlit	N/A	N/A	663, 665
PHYSICAL	Universal Enclosure	Stainless steel NEMA 4X (IP66)	Stainless steel NEMA 4X (IP66)	Stainless steel NEMA 4X (IP66); Painted NEMA 12, 663 only
	Panel Mount Enclosure	Stainless steel NEMA 4X (IP66 on front seal only)	Stainless steel NEMA 4X (IP66 on front seal only)	Stainless steel NEMA 4X (IP66 on front seal only)
	Keypad	460 - 5 key, durable elastomeric rubber	22 Key, alpha numeric, durable elastomeric rubber	28 Key, alpha numeric, durable elastomeric rubber
		465 - 22 key, alpha numeric, durable elastomeric rubber	---	---
	Dimensions	460 - 11.01"W (27.98 cm) x 7.24"H (18.39 cm)	11.01"W (27.98 cm) x 8.96"H (22.76 cm)	660/661/662 (Universal Mount) - 11.01"W (27.98 cm) x 8.96"H (22.76 cm)
		465 - 11.01"W (27.98 cm) x 8.96"H (22.76 cm)	---	660/661/662 (Panel Mount) - 9.88"W (25.10 cm) x 8.88"H (22.56 cm)
		---	---	663 (Machine/Wall Mount) - 16.16"W (41.10 cm) x 22.50"H (57.15 cm)
---		---	665 (Universal Mount) - 11.01"W (27.98 cm) x 12.10"H (30.73 cm)	
---		---	665 (Panel Mount) - 10.25"W (26.04 cm) x 11.90"H (30.23 cm)	
APPROVAL	NTEP	COC # 01-031A2	COC # 01-081A2	COC # 01-013A2
	Measurement Canada	AM-5417 Rev. 1	AM-5419 Rev. 1	AM-5416 Rev. 1
	PTB	D98-09-024 Rev. 3	D03-09-014	D03-09-009
	Electrical	ETL, CE	ETL, CE	ETL, CE



Product Line



Parts Counting



Airline Systems



Floor Scales



Hazardous Area Weighing



Portable Scales



Software/
Peripherals



Bench Platforms



Checkweighers



Tank & Vessel
Weighing Assembly



Indicators

Your local distributor is:



ETHERNET

ISO 9001



SPX GSE Scale Systems

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www.gse-inc.com

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