Chapter 24 Data Registers & Strings

This chapter defines and describes several types of data registers (parameters) that can be *custom named*, or adjusted. For the 450 Series controllers, these registers are identified as:

- Weight-based parameters, including the accumulation weight-based parameters
- Date and Time parameters
- Variables (VARs), which are setpoint target registers (Target#1 P-80 and Target#2 P-84).
- Register (Reg#1)

During normal weighing and counting operations, the 450 Series controller constantly updates the numeric data in the *weight-based registers*.

Each register is defined with two parts, or *fields* — the *name* field and the *data* field. Any of these registers can be printed out the COMM port via a custom transmit.

Depending on how the registers are formatted for transmission, the *name field* can be omitted from the transmission.

The name associated with the *data* portion of the register is custom-programmable, or *adjustable*. This means the name of the data field can be changed.

24.1 Weight-Based Parameters (P600 - P606)

The weight-based parameters are pre-named for standard weighing functions and include *basic* weight-based parameters and a*ccumulation* weight-based parameters. You can custom-name these registers to the specification of the scale user. Certain applications might even require a custom name.

The name can have as many as 49 characters, all of which can be printed. However, because the two-line dot matrix display has only 10 character positions, only the first 10 characters of the name can be displayed when the data entry mode is accessed.

If the name has five or fewer characters, the bottom line of the dot matrix display shows "value." Value is part of the default label that displays regardless of whether the variable or register has been named. If you want a name that is five characters or less, you simply add a space to the sixth character position.



24.1.1 Naming the Basic Weight-Based Parameters (P600 - P602)

Table 24-1 lists the three *basic* weight-based parameters.



Figure 24-1 450 Keypad Cursor Keys

Access this parameter number	To "name" this parameter
P600 Gross	Gross Weight
P600 Net	Net Weight
P600 Tare	Tare Weight

Table 24-1. Naming the Basic Weight-Based Parameters

24.1.2 Naming the Accumulation Weight-Based Parameters (P603 - P606)

Table 24-2 lists the *accumulation* weight and quantity-based parameters.

Access this parameter number	To "name" this parameter
P603 GrTOT	Gross Total
P606 NetTOT	Net Total
P609 Accum	Accumulation Counter

Table 24-2.Naming the Accumulation Weight-Based
Parameters

24.2 Time and Date Parameters (P611, P650)

The Time and Date parameter is pre-named *Tm/Dt*. You can custom-name this register to the specification of the scale user. Certain applications might even require a custom name.

The name can have as many as 49 characters, all of which can be printed. However, because the two-line dot matrix display has only 10 character positions, only the first 10 characters of the name can be displayed when the data entry mode is accessed.

Access this parameter number	To "name" this parameter
P611 Tm/Dt	Time/Date
P650 TrTim	Truck Time

Table 24-3. Naming the Time/Date Parameters

If the name has five or fewer characters, the bottom line of the dot matrix display shows "value." Value is part of the default label that displays regardless of whether the variable or register has been named. If you want a name that is five characters or less, you simply add a space to the sixth character position.

Table 24-3 lists the time and date parameters.

24.3 Naming the Truck Weight-Based Parameters (P612 - P614)

Table 24-4 lists the truck weight-based parameters.

Access this parameter number	To "name" this parameter
P612 TrGrs	Truck Gross
P613 TrNet	Truck Net
P614 TrTar	Truck Tare

Table 24-4.Naming the Weight-Based TruckParameters

24.4 Naming the ID (string type) Parameters (P621)

Table 24-5 lists the string type based parameters.

Access this parameter number	To "name" this parameter
P621 ID#	ID#

Table 24-5. Naming the ID Parameter

24.5 Naming Counting-Based Parameters (P630 - P637)

Table 24-6 lists the counting-based parameters.

Access this parameter number	To "name" this parameter
P630 Qty	Quantity
P631 QtTOT	Quantity Total
P634 APW	Average Piece Weight
P635 APW*K	Average x 1000
P637 Sampl	Last Sample Size

 Table 24-6
 Naming the Counting Type Parameters

24.6 Variable Parameters (Target and Reset Values) (P680 thru P689)

The variable parameters (Target 1 and 2, Activate 1 and 2 and Reset 1 and 2) are used for the setpoint target, activation and reset values. These variable type parameters are listed in Table 24-7.



Figure 24-2 Character Listing

24.7 Numeric Parameters (REG#1) (P691)

Register #1 (REG#1) can be named, making its intended usage much more apparent to the scale user. The 450 has one (1) REG that can have a custom name associated

Access this parameter number	To "name" this parameter
P680 Targ1	Target#1
P684 Targ2	Target#2
P686 AVal1	Activation Value #1
P687 RVal1	Reset Value #1
P688 AVal2	Activation Value #2
P689 RVal2	Reset Value #2

Table 24-7 Naming the Variable Type Parameters

Access this parameter number	To "name" this parameter
P691 Reg 1	Register#1

 Table 24-8
 Naming the Register Type Parameter

with it. The name can be any length so as it does not exceed 49 characters. The name length greater than ten characters is fine if its sent to a printer. Only the first ten characters will be displayed in the ten character auxiliary display (2-lines, 5x7 dot matrix) when the data entry mode is accessed. If the name is five characters or less in length, the bottom line (five characters) of the ten character auxiliary display will still show the word "value". This is part of the default name as it would be displayed if the register had not been named. If it is desirable to have the variable name five characters or less, simply add a (space) to the sixth character name location. Register Type parameters are listed in Table 24-8 Naming the Register Type Parameter.

Parameter ID Number	Parameter ID Name	Parameter ID Data
80	Targ1	0.0
84	Targ2	0.0
86	AVal1	0.0
87	RVal1	0.0
88	AVal2	0.0
89	RVal2	0.0
91	Reg 1	0

Table 24-9 Variable and register data fields

Accessing this parameter sets the "naming" for Register #1.

ie. ----205 TICKET(S)

----100 BOXES



Figure 24-3 455 Keypad Cursor Keys

24.6.1 Naming REG#1

P691. - - Reg#1

24.7 Character Entry (NAME)

(M450)

When alphabetic and other non-numeric characters are being entered into the indicator, The [PRINT] and [UNITS] keys assume the functions of arrow keys similar to those found on a computer keyboard (see Figure 24-1 Keypad Cursor Keys). Press the [PRINT] or **[UNITS]** keys to begin an entry. The **[UNITS]** key places an A in the lower right position on the display. Use the **[PRINT]** key to scroll forward through all possible characters and [PRINT] + [UNITS] simultaneously to backup one step. Press [UNITS] when the desired character is displayed. This shifts the chosen character to the left making room for the next character, which is first displayed as an "A". This new character is then set to its desired value. Press [UNITS] and **[PRINT]** simultaneously to backup through the setup if required. When the text entry is complete, press the [TARE] key which doubles as an [ENTER] key to store the data. If an alpha keypad is available, then the text characters may be entered directly. Alpha keypads can used in a variety of ways such as with the GSE computer simulation of the indicator, by connecting a computer in terminal mode to the Comm Port of the indicator, by using the alpha keypad sold with the GSE Model 625/622 and 550/570/574, or by downloading a setup file from a computer through the COMM port of the indicator.

This operation is in effect when entering Register "data" and while in Setup Modes **P157**, **P158**, **P691** and **P1000**. Refer to Figure 24-2 Character Listing for available characters and their order of appearance.

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The **[UNITS]** and **[TARGET]** keys double as **Up** and **Down** arrow keys respectively. While having accessed any mode or parameter which requires a character entry, the **[UNITS]** key will scroll through a set of ASCII characters. The **[TARGET]** key will scroll through the set in reverse. The **[TARE]** key or Right Arrow when pressed will move over to the next character position. The **[ID]** key or Left Arrow will backup to the previous character.

As entries are keyed into the entry buffer, the **[PRINT/ENTER]** key will complete the entry for the 455.

See Figure 24-3 to locate the *character entry* keys on the Model 455 keypad.

24.8 Store Entry to Target Variables and Register#1

The second part of the Reg or Target variables is the data portion. Data can be entered directly from the front panel easily by adding parameter 80, 84 and 91 to the selectable modes P300.XX (Refer to chapter 12 for more information on Selectable Operating Modes). See table 24-6 Variable and register data fields.

- (Parameter **80**) Retains the name and data fields for Target variable #1.
- (Parameter **84**) Retains the name and data fields for Target variable #2.
- (Parameter 91) Retains the name and data fields for Register #1.

When one of the target (variable) or register modes in accessed, numeric entries can be entered into the indicator. The [PRINT] and [UNITS] keys assume the functions of arrow keys similar to those found on a computer keyboard (see Figure 24-1 Keypad Cursor Keys). Press the [PRINT] key to begin a numeric entry (alpha entries are invalid). The first character is a decimal point (use if needed in entry). The [UNITS] key toggles between pre-selected unit types when having accessed a target mode (variable mode). Use the [PRINT] key to scroll forward through all possible single digit numeric characters (0 thru 9). Pressing [**PRINT**] + [**UNITS**] simultaneously will backup one step. Press [UNITS] when the desired character is displayed. This shifts the chosen character to the left making room for the next digit entry, which is first displayed as an "decimal point". This new character (decimal point) is then set to its desired value. Press [UNITS] and [PRINT] simultaneously to backup through the setup if required. When the numeric entry is complete, press the [TARE] key which doubles as an [ENTER] key to store the data.

If an alpha-numeric keypad is available, then the digits may be entered directly. Alpha keypads can used in a variety of ways such as with the GSE computer simulation of the indicator, by connecting a computer in terminal mode to the Comm Port of the indicator, by using the alpha keypad sold with the GSE Model 625/622 and 550/570/574, or by downloading a setup file from a computer through the COMM port of the



P360	Entered Value	Displayed Value
50%	100.0040	100.00
50%	100.0050	100.01
10%	100.0009	100.00
10%	100.0010	100.01
95%	100.0090	100.00
95%	100.0095	100.01

Table 24-10, Rounding Parameters Examples

indicator.

24.8.1 "Data" field (Reg#1, Characteristics)

There are a few specifics that are highly worth noting pertaining to the data field of Reg#1. Reg#1 will allow entries of integers only. Members of the set of positive whole numbers (1, 2, 3,...), negative whole numbers (-1, -2, -3,...), and zero (0). The term "whole number" is defined as complete, non-fractional. When entering a negative value from the front panel the **[PRINT]** key will scroll through numbers 0 - 9 including a "." and a negative sign. When in the viewing mode of Reg#1, the **[CLR]** key will reset the value to zero.

24.8.2 Rounding (REG#1)

A REG retains **"whole" numbers only**. Any fractional portion of a number entered will round up or down to the nearest whole number. The accuracy of a REG is 1

part in 3,000,000. The full range is $\pm -1 \ge 10^{38}$.

e.	20.4 20 20	entered displayed printed
	20.5 21	entered displayed

21	printed
-100.55	entered
-101	displayed
-101	printed

24.8.3 Incrementing Register#1 (REG#1)

REG#1 can also be used as a counter (P91). When viewing REG#1 it can be updated by entering a new value into it by using the cursor keys. To autoincrement the register's value parameter 91 must be transmitted out the COMM port using one of the format codes listed in chapter 8 Communications. The General Purpose Register Format codes will increment or decrement the register before or after transmissions. The maximum value allowable in the display is 999,999 and the minimum value allowable in the display is -99,999. If either of these limits is exceeded the display will read '# > Dsply". This message means that the number in the display is greater than its capabilities for displaying it. Until REG#1 is incremented or decremented back into the acceptable range, the message will remain on the display. Internally this value is retained and has an accuracy of 1 part in 3,000,000. The 450 Simulator software theoretically has an accuracy of 1 part in 16,777,216. in either case, If these values are exceeded, its possible the register will give random results. The internal value is always transmitted during print operations. Reg#1 will accept a value entered into it directly. This allows counters to be reset to any initial value. Simply access REG#1, key in the desired value and press [ENTER]. The [CLR] key resets REG#1 to zero.

REG#1 is always written to E^2 at power-down so at power-up the REG value is retained.

24.9 Target, Value and Reset (Setpoints)

A value stored in a Targ#, setpoint Value or Reset

variable will be saved to E^2 when the power is removed from the indicator. During normal operation its not desirable for the setpoint values to be lost when the power is removed. In other words at power-down the

variable Values will be written to E^2 .

24.10 Renaming Parameters (Notes)

1 If the preset parameter P412 is enabled, then the first letter of a renamed parameter becomes the preset identifier. See the section on preset parameters for more details.

24.11 Rounding Parameters

P360 allows you to change the rounding criteria for all parameter data. A value from 1% to 99% may be specified. The default value is 50%. Table 24-7 demonstrates the effects of using this parameter:

Note: Register 1 is not affected by P360's setting; rounding for register 1 remains at 50%.

<u>P361</u> *Rnd B* and <u>**P362**</u> *Rnd C* allow for alternate rounding values, however no provisions have been implemented for their use in this revision.

