Chapter 26 (OIML)

26.1 European Specific Modifications

OIML => Organization for International Legal Metrology

OIML Parameter:

An OIML selection parameter, P410, has been created. To prevent accidental switching of this parameter once the parameter is selected, it may only be changed by entering **[9991] [ENTER]** to enable OIML or **[9990] [ENTER]** to disable OIML. It cannot be changed by simply pressing **[ENTER]** alone. When a DEFAULT SETUP (P65001 or 65002) is performed the current state of the OIML selection is NOT affected. This is similar to the operation of the model number parameter.

Enabling the OIML parameter has the following effects:

a. The layout of the keys used on the OIML version of the 450 keypad is assumed. Refer to figure 26-1 for a picture of the keypad. Also refer to table 26-1 for key definitions.

The OIML keypad will be included in the 450 version with CE labeling, part number 200450-03103. The keypad is also available separately.

When the **[F2]** key is pressed, if the preceding entry is purely numeric, the **[F2]** key performs the **[SELECT]** function and the indicator proceeds to the specified mode or parameter. The **[F2]** key without an entry always performs the **[SELECT]** function.

The **[]->** ([PRINT]) key is also the up arrow key, the **[F1]** key is used to begin alpha entries.

b. The overload indication of the indicator, "Code-03 Over-load" and "Code-02 Under-Load", will occur at nine divisions (as defined by P111) above/below capacity (per P110). The overload is still based upon the zero established during calibration of the indicator to the platform. Therefore subsequent use of the front panel zero key will shift the maximum displayed value upward or downward, depending on the amount zeroed out.

c. The name of certain parameters will include an indication of whether the values of those parameters were determined by the indicator or by some other means such as operator entry. These parameters are located in table 26-2.

The names in table 26-2 will be preceded by a "P" if the value is preset, ie not determined by the indicator, when the name is printed or shown on the display. This preset marking ability also applies to the user supplied names which are now possible for all parameters. Refer to the namable weight parameters section for more

LOCATION	MARKING	FUNCTION	EQUIVALENT SERIAL COMMAND	ARROW KEY or 2nd Function
Left most key (1st)	-> 0 <-	ZERO	%z	[clr]
2nd key from left	[]->	PRINT	%p	Up arrow
Middle Key	F1	UNITS	%u	Right Arrow
4th key from left	-> T <-	TARE	%t	[enter]
5th key from left	F2	SELECT	%s	- - -

Table 26-1, OIML 450i Keypad Key Definitions

Parameter Number	Parameter Name
2	Tare
3	GrTOT
6	NtTOT

Table 26-2, Pre-setable Parameters

information.

The tare parameter will be considered not preset when an auto-tare is performed or when it is cleared (by keying in **[0] [TARE]**) or if it is lost after a power-down (if P161 TrSav = Disbl). When the tare is changed in any other manner (ie entering a numeric tare, a value received via serial transmission, recalled from a database, etc...) then the tare will be considered preset.

The gross, and net total parameters will be considered not preset if the total value of the parameter is cleared to zero. However, entering a numeric value (or changing it in any of the ways listed above) for an accumulate parameter will cause that parameter and its derivatives it to be considered preset. Performing an accumulation does not affect the preset status of an accumulate parameter.

26.2 International Characters

The ability to display international characters has been added. Setup parameter P411 was created to specify the desired language of operation. Pressing **[ENTER]** at P411 toggles through the available selections. Refer to table 26-3 for the specific characters supported for each language.

Table 26-3 is compatible with a commonly used Epson standard for supporting international characters. Thus if a printer used with the indicator also supports the Epson international character standard, then the special characters can be printed as they are displayed.

When scrolling through the available characters to make an entry, the character in the selected row will appear instead of the character at the top of the column. Therefore these characters may be used wherever an alpha entry is allowed, such as parameter names, macro prompts, custom transmit setups, user entries, etc...

The decimal and hexadecimal representation of each character is shown at the very top of each column for your reference. The indicator simply interprets the listed codes before displaying a character, depending on which character set is specified by setup parameter P411.

26.3 Namable Weight Parameters

The ability to name parameters (such as Vars and Regs) has been extended to include virtually every parameter, including gross, net, tare, etc... This allows these parameters to be named as required in any country or for any application. Examples of such names are for Gross to be re-named simply "G", "Gr", "Brutto", "Br", or whatever may be required.

The names are entered in the P600 area of the setup mode. For example to re-name the time/date, parameter 11, from "Tm/Dt" to "Time", proceed to parameter P611 (600 + 11). Then enter the desired name for the parameter. Refer to chapter 4 of this Technical Reference Manual for assistance with scrolling in alpha entries.

If the OIML features are enabled (P410), then when naming any of the "Preset-able Parameters", as listed in table 26-2, the first character of the name will only be seen when the parameter has been preset. For example, to cause the tare name to print out as "T" for auto-tares and "PT" for preset tares, the name "PT" should be given to the tare using setup parameter P602.

In order to cause the same name to always be used for one of these parameters, regardless of whether or not it has been preset, enter a space as the first character of the name. The space will be ignored in both the displayed and printed name.

Note that an entered name is used both on the lower line of the display when the parameter is selected and it is transmitted with the parameter when specified in a custom transmit.

International Character Set			Re-mapped Characters											
Character Number:		Decimal Hex	35 23	36 24	64 40	91 5B	92 5C	93 5D	94 5E	96 60	123 7B	124 7C	125 7D	126 7E
Selection#	**Name**	**Description**												
0	USA	United States	#	$	@	[	\	]	ˆ	`	{	|	}	~
1	Frnce	France	#	$	à	°	ç	§	ˆ	`	é	ù	è	¨
2	Gemn	Germany	#	$	§	Ä	Ö	ü	ˆ	`	ä	ö	ü	ß
3	UK	England	£	$	@	[	\	]	ˆ	`	{	|	}	~
4	Dnmrk	Denmark I	#	$	@	Æ	Ø	Å	ˆ	`	æ	ø	å	~
5	Swedn	Sweden	#	¤	É	Ä	Ö	Å	ü	é	ä	ö	å	ü
6	Italy	Italy	#	$	@	°	\	é	ˆ	ù	à	ò	è	Ì
7	Spain	Spain I		$	@	¡	Ñ	¿	ˆ	`	¨	ñ	}	~
8	Japan	Japan	#	$	@	[	¥	]	ˆ	`	{	|	}	~
9	Norwy	Norway	#	¤	É	Æ	Ø	Å	ü	é	æ	ø	å	ü
10	Dnmrk2	Denmark II	#	$	É	Æ	Ø	Å	ü	é	æ	ø	å	ü
11	Spn2	Spain II	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
12	LatAm	Latin America	#	$	@	[	Ñ	]	ˆ	'	{	|	ˆ]	~

Table 26-3, International Character Set

26.4 Check-sums on Transmitted Data

In Europe, if a printer is not located adjacent to the indicator then the transmission must include a checksum and a mechanism to re-attempt a transmission in case of errors in order to be PTB approved.

Several different styles of checksums may now be calculated by the indicator to help insure the integrity of the transmitted data. One of these new checksum calculation methods matches that used by Epson in a protocol commonly used in Europe. Together with capabilities of the Input Interpreter (P900), the 450 indicator may now be used with these Epson printers, insuring correct data transfer by re-sending the transmission if the required acknowledge is not received.

A data checksum calculation consists of three

Checksum Code	Function	Description
.300	stop	Stop calculating the checksum but do not transmit yet.
.301	CCITT	International standard CRC
.302	SDLC/HDLC	CRC used by IBM
.303	CRC-16	Most commonly used CRC in the United States
.304	CRC-12	Used when bytes are 6 bits
.305	LRCC-16	16 bit CRC
.306	LRCC-8	8 bit CRC, used by Epson
.307	XMODEM	Registers are shifted left, opposite CCITT method which shifts right. Used with transmissions up to 9600 baud.
.308	Sum 16	2 byte additive checksum
.309	Sum-8	1 byte additive checksum
.310	Send Checksum	Transmit checksum sending LSB first
.311	Send Checksum	Transmit checksum sending MSB first

Table 26-4, Checksum Format Codes

commands:

1. Initialize and begin calculating a specific type of checksum starting with the next transmitted character.

2. Stop calculating the checksum (optional). Required only when the checksum is not to be transmitted until after some additional characters are transmitted.

3. Transmit the checksum. Since most supported checksums are two-byte, there are two commands, one for most significant byte (msb) first and one for least significant byte (lsb) first. Both bytes will be transmitted in succession. For single byte checksums, either command may be issued.

Several new codes have been defined which allow these commands to be embedded at the proper locations in a custom transmit or to be done at a particular time within a macro. Similar to the way a carriage return/line feed combination may be programmed into a custom transmit setup by entering .256, the codes for the checksum may be entered as shown in table 26-4.

Note that this feature only allows the transmitting of checksums, not the receiving of checksummed data.

Checksum codes are represented by a Ö symbol in the custom transmit table.

26.5 Printer Interface Example

GSE Model 450 to Epson Printer

Implementing Epson "BT-90" Block Transfer (commonly used in Europe)

While there are numerous ways of accomplishing various tasks on the 450 (including the one at hand) below is one possible method.

Note: This example requires the use of M450 firmware dated Jul, 1995 or later (per P60102). The Block Proof character used in the Epson BT-90 interface is known as "LRCC-8".

The Custom transmit describes the format using CRCs.

100%s23640%i%e	Access Setup Modes, Allowing Changes
1999%s%c%e	P1000. Custom Transmit #1
.002%e	<STX>
.306%e	Check LRCC8
%e0%e%e0%e%e	Gross Format = 0
.256%e	<CR> <LF>
.003%e	<ETX>
.310%e	Check PrnLo
%z	Exit Setup Mode

26.6 Specific International 450 Versions

Standard version
(GSE Part #: 200450-03103)
with U.K. line cord specifications.

Panel Mount version
(GSE Part#: 200450-13103)
with U.K. line cord specifications.

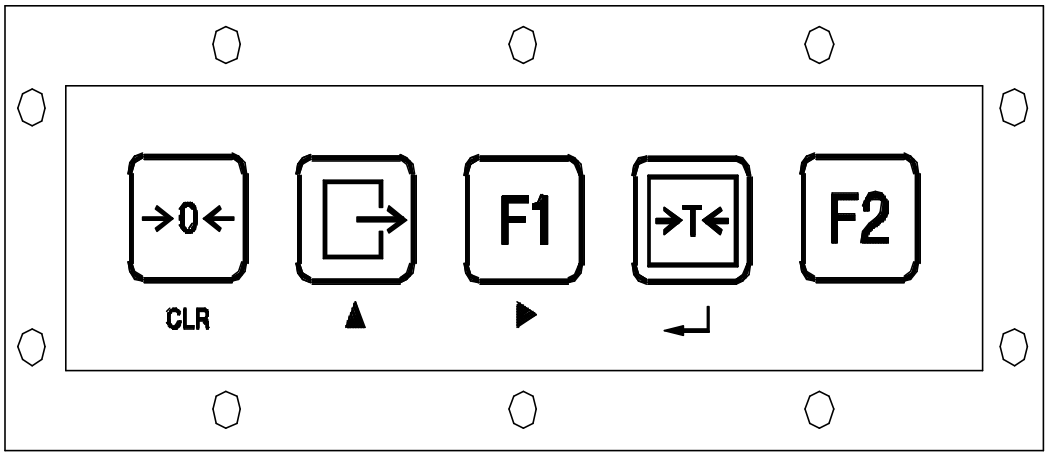

Figure 26-1, Model 450i International Keypad

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