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TIM30 MANUAL

FOR SETTINGS AND CONFIGURATION

Issue 1.0

**For Meter Software Version
31.1**

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The TIM30

What is the TIM30?

The TIM30 is an economy leisure meter featuring a single relay able to switch up to 30 Amps.

TIM30 Features and options

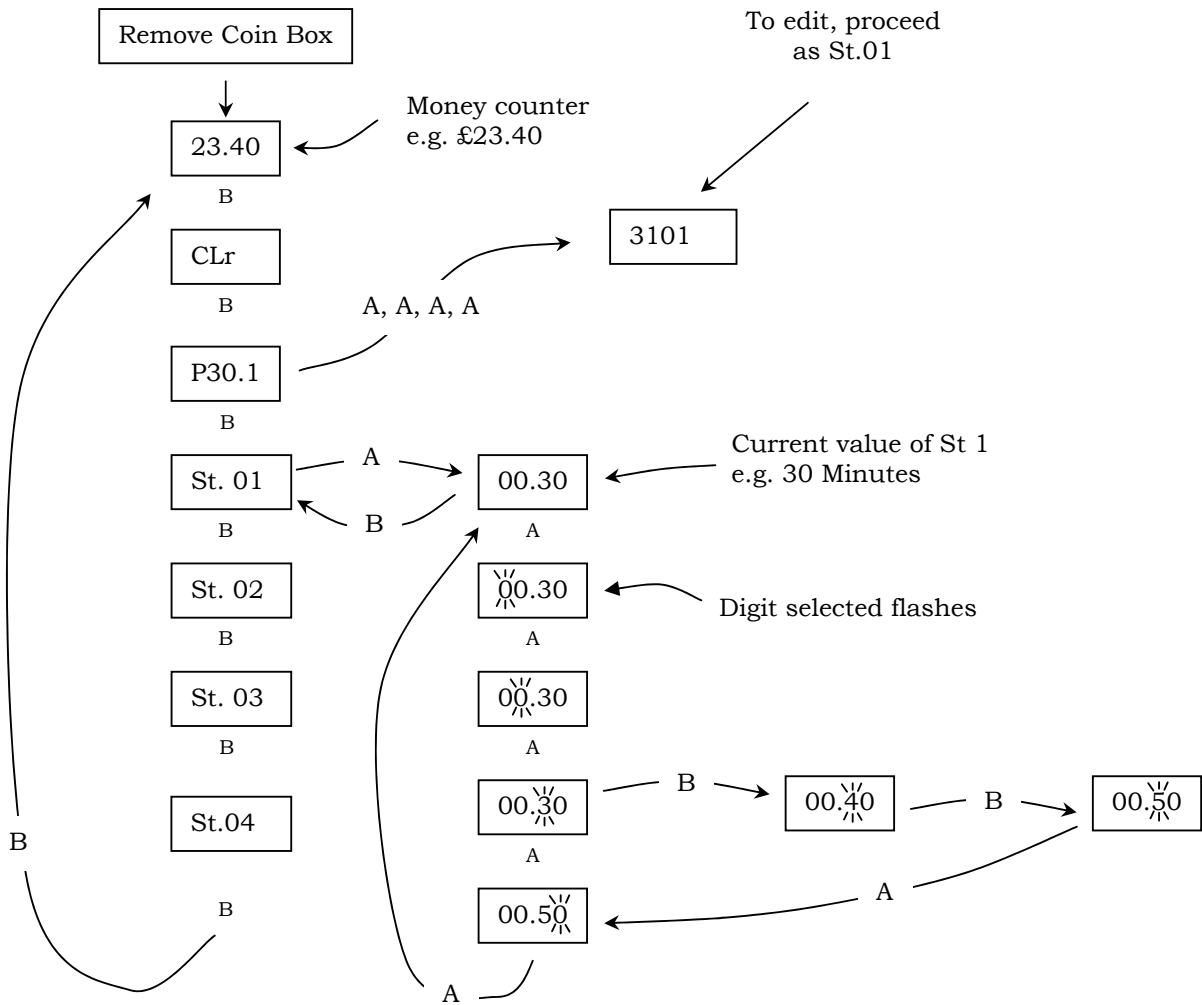
- 1) Coin options available are: -
 - Single coin - £1, 10p, 20p, 1 Euro, 50 cents or token
 - Dual coin - £1 and 20p, £1 and 10p
- 2) Timing range: -
 - 1 Second to 59 Minutes 59 Seconds per coin
 - or
 - 1 Minute to 99 Hours 59 Minutes per coin
- 3) Coin counter – Record coins collected since box was last emptied
- 4) Permanent coin counter – Records all coins collected since installation
- 5) Permanent credit counter – Records total credit used since installation
- 6) Pre-end warning sounds 1 Minute before the end of the session
- 7) Credit save – Suspends credit countdown and switches off the load
- 8) Clear credit on power up
- 9) View permanent counter without removing the coin box
- 10) Fascia start button
- 11) Override or setting lockout (Requires the optional keyswitch)

SETTINGS AND CONFIGURATION

The electronic specification of all TIM30 meters is identical. Their individual operation comes from the way the meter is programmed. This is achieved by using five settings, St.01 to St.04, and a 4-digit configuration number. This manual explains the function of these settings.

To access these setting the coin box must be removed and the push button operation is as follows: -

- Button 'A' = to view current value and to selects digit to change.
- Button 'B' = cycles through displays and increments selected digit.



Settings 1 to 4

There are 4 settings to be configured, as follows: -

St 1	CPC1	Credit per coin, £ opto.	HH.MM.SS ¹
St 2	CPC2	Credit per coin, 20p opto.	HH.MM.SS ¹
St 3	TM	Total money entered since installation.	££££.pp
St 4	TC	Total credit given since installation.	HHHH.MM ²

See the relevant section for further details: -

St.01 & 02	St.01 and St.02 - Credit per coin settings
St.03	St.03 - Total Money
St.04	St.04 - Total Credit

To change the Setting values: -

- Remove the coin box.
- Press and release button B until the display shows the required setting (St.xx).
- Press and release button A to show current value.
- Press and release A to select digit to alter (selected digit flashes).
- Press and release B to alter the value of selected digit.
- Repeat d and e until required setting is obtained.

To exit

- Press and release A until no digits are selected.
 - Press and release B to return to St.xx.
 - Press and release B proceed to next St.xx.
- or**
- Insert coin box.

Note: The new value is not stored in the memory until the coin box is inserted.

Configuration Settings

The basic operating modes of the meter are enabled or disabled using the configuration number. Each digit of the configuration number controls several modes of operation. The value of each digit is calculated by adding together the values of the features required in that digit. Use the Configuration chart to find the value of the feature(s) required.

To change the configuration values: -

- Remove the coin box.
- Press and release button B until the display shows the software version number (P.30.x).
- Press and release button A four times, the display will show the current value.
- Press and release A to select digit to alter (selected digit flashes).
- Press and release B to alter the value of selected digit.
- Repeat f and g until required setting is obtained.

¹ HH.MM or MM.SS depending upon Min/Sec setting.

² Shown in HH.MM if value < 100 Hours, HHHH if value => 100Hrs.

To exit

- g) Press and release A until no digits are selected.
 - h) Press and release B to proceed to St.01.
- or**
- i) Insert coin box.

Note: The new value is not stored in the memory until the coin box is inserted.

Digit 1 - Coins/Tokens Selection

Enter the relevant value in configuration digit 1 for one of the following: -

Value	Coin/Token
1	£1 only
2	20p only
3	£1 & 20p
4	10p only
5	£1 & 10p
8	Token

Digit 2, 3 & 4

- Minutes and seconds mode.
- Credit save
- Clear Credit Remaining.
- View St.03 and St.04 with coin box in.
- Fascia Start button.
- Audible indicator (beep).
- Normally closed override switch.
- Setting lockout (with override switch).

Minutes and Seconds Mode

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 2. If no other configuration changes are required add 1 to digit 2 to enable, or subtract 1 to disable this feature.

When enabled ST.01 and 02 are displayed and set as MM:SS instead of HH:MM. The flashing Mins/Secs dot on the display indicates this.

When changing from HH:MM to MM:SS the value set in the Hours register will be zeroed. When changing back to HH:MM the value set in the Seconds register will be zeroed.

Credit Save

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 2. If no other configuration changes are required add 2 to digit 2 to enable, or subtract 2 to disable this feature.

When enabled this feature allows the credit remaining value to be held during the Main and Pre-end periods.

To activate credit save press button 'B'. This will hold the remaining credit and switch off both relays. An intermittent 'HELD' message will be displayed whilst credit save is active.

To return to normal countdown press button 'A' (Fascia Start Button). This will restart the countdown, clear the 'HELD' message and reactivate the Main or Pre-end period relay status.

Clear Credit on Power-up

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 2. If no other configuration changes are required add 4 to digit 2 to enable, or subtract 4 to disable this feature.

This feature when enabled clears all Credit Remaining when the meter is powered up. If disabled then any Credit Remaining left on the meter when it was powered down will be restored. This feature is useful when the meter is connected via a time clock that prevents use of a facility after a certain time. In this type of application the remaining credit is not normally required when the time clock switches back on.

View St.03 & St.04 with coin box in

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 3. If no other configuration changes are required add 1 to digit 3 to enable, or subtract 1 to disable this feature.

When enabled this feature allows the values of the Total Money register (St.03) and Total Credit register (St.04) to be viewed without removing the coin box as follows: -

- 1) Press both 'A' and 'B' together (i.e. press and hold one button while pressing the other). 'St.03' will be displayed.
- 2) Press button 'A' to view the current value of St.03.
- 3) Press button 'B'. 'St.03' will be displayed again.
- 4) Press button 'B' again. 'St.04' will be displayed
- 5) Press button 'A' to view the current value of St.04.
- 6) Press button 'B' to return to the Credit Remaining display.

Ignore the relevant button 'A' press if it is not required to view that value.

Fascia Start Button

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 3. If no other configuration changes are required add 2 to digit 3 to enable, or subtract 2 to disable this feature.

Start Button operation

- 1) Credit remaining equals to zero.
- 2) Coin(s) entered.
- 3) Credit added to Credit Remaining.
- 4) Countdown held and Credit Remaining shown on the display.
- 5) Pressing the 'Start Button' starts the 'Main period' and countdown begins.

Audible indicator (Beep)

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 4. If no other configuration changes are required add 1 to digit 4 to enable, or subtract 1 to disable this feature.

When enabled an audible indication is given when: -

- 1) A button is pressed.
- 2) The Pre-end period starts.
- 3) The Main period finishes.
- 4) A coin or token is entered and validated.

Normally closed override switch

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 4. If no other configuration changes are required add 2 to digit 4 to enable, or subtract 2 to disable this feature.

When enabled this feature allows a normally closed key switch to give the same function as a normally open key switch.

Setting lockout

Use the Configuration chart to find the value of the option(s) required and include this feature when calculating the value of digit 4. If no other configuration changes are required add 4 to digit 4 to enable, or subtract 4 to disable this feature.

When enabled this feature prevents the settings (St.01 and St.02) being changed whilst the optional key operated switch is in the locked position.

Note:

The Override facility is not available whilst this feature is active.

Money Counter (££££.pp)

The money counter is displayed automatically when the coin box is removed. This display shows the amount of money entered since the coin box was last inserted/emptied.

As the display can only show 4 digits of this 6 digit register the value is shown in one of the following formats: -

Format	Example value	Displayed as
	££££.pp	
££.pp	0012.40	12.40
££££	0234.60	0234 (No centre dot indicates whole Pounds only)

The display switches from ££.pp to ££££ format automatically when the value of Pounds exceeds 99. When the ££££ format is displayed pressing and holding button 'A' will change the display to ££.pp format to allow the Pence value to be displayed.

Tokens are always displayed in 4 digits 0000 to 9999. Therefore 10 tokens would be displayed as 0010.

When the coin box is inserted the money counter is automatically reset to zero. To prevent the counter being reset press and hold push button B while inserting the box.

St.01 and St.02 - Credit per coin settings

The two settings St.01 and St.02 are used to set the amount of time given on entry of a coin.

St.01 sets the value for the £1 coin and tokens (except L1)

St.02 sets the value for the 20p, 10p and L1 token

See the start of this chapter for details on how to change the value of these settings.

St.03 - Total Money (££££.pp)

The Total Money register (St.03) shows the total accumulated amount of money or tokens entered since the meter was manufactured or received a factory reset.

This register stores a value up to £9999.90. When this value is exceeded the register rolls over. E.g. £9999.00 plus £5 would result in a value of £0004.00 (£4) being stored.

As the display can only show 4 digits of this 6 digit register the value is shown in one of the following formats: -

Format	Example value	Displayed as
	££££.pp	
££.pp	0012.40	12.40
££££	0234.60	0234 (No centre dot indicates whole Pounds only)

The display switches from ££.pp to ££££ format automatically when the value of accumulated Pounds exceeds 99. When the ££££ format is displayed pressing and holding button 'A' will change the display to ££.pp format to allow the Pence value to be displayed.

Tokens are always displayed on 4 digits 0000 to 9999. Therefore 10 tokens would be displayed as 0010.

St.04 - Total Credit (HHHH:MM)

The Total Credit register (St.04) shows the total accumulated credit since the meter was manufactured or received a factory reset.

This register stores a value up to 9999:59 (9999 Hours 59 Minutes). When this value is exceeded the register rolls over. E.g. 9999:00 plus 5 Hours would result in a value of 0004:00 (4 Hours) being stored.

As the display can only show 4 digits, the value is shown in one of the following formats depending upon its value: -

Format	Example value	Displayed as
	HHHH:MM	
HH:MM	0005:45	05.45
HHHH	0107:54	0107 (No centre dot indicates whole hours only)

The display switches from HH:MM to HHHH format automatically when the value of accumulated hours exceeds 99. When the HHHH format is displayed pressing and holding button 'A' will change the display to HH:MM format to allow the Minutes value to be displayed.

This register is updated at the same time as the Credit Remaining register, therefore any credit cleared from the Credit Remaining value using the Clear Credit facility will still be included in the Total Credit reading.

Override

The override allows free use of the facility controlled by the meter for servicing or match play.

Turning the optional key operated switch to the on position will: -

- 1) Clear any Credit Remaining.
- 2) Switch the relays to the Run-On configuration status.
- 3) Show 'FrEE' on the display.

Note:

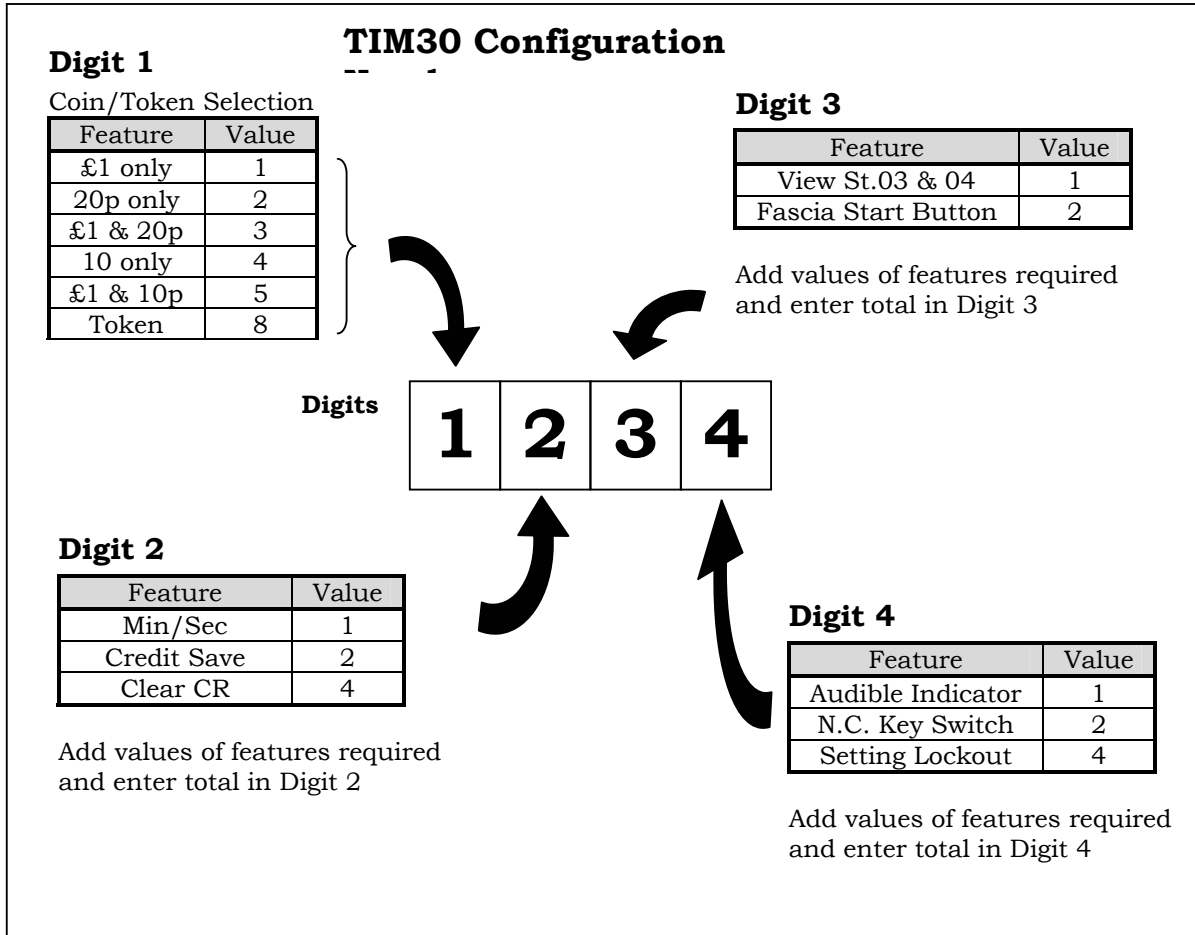
This feature is not available when the Setting Lockout feature is enabled.

Clear Credit Remaining

The Credit Remaining can be cleared in one of three ways: -

- 1) On power up with Clear CR option set. (See 'Clear Credit On Power-up for further details)
- 2) By using the Override feature. (See Override for further details)
- 3) By using the Clear Credit option in the service mode (Coin box removed)
 - a) Remove the coin box
 - b) Press button 'B'. Display will show 'CLr'.
 - c) Press both buttons together (i.e. press and hold one button while pressing the other). This clears the Credit Remaining.

Configuration Chart



Text Messages

One second messages

Message	Description
Coin	Token or coin validated and accepted.
Er.xx	Where 'xx' is the error number (See 'Error Messages' for further details)
SynC	See 'Error Messages'
P.xx.x	Program/Software version installed, where 'xx.x' is the version number.

Flashing Messages

Message	Description
HELD	The Credit Save has been activated. The countdown has stopped.

Static Messages

Message	Description
FrEE	The optional key operated switch has been activated. (See Override for further details)
COLL	The coin box is full or the validation sensor has been obstructed

Static Service Mode Messages

CLr	Clear credit remaining. (See 'Clear Credit' for further details)
P.xx.x	Program/Software version installed, where 'xx.x' is the version number.
St.xx	Setting number location, where 'xx' is the setting number 01 to 04.

Error Messages

Error	Description
01	Opto 1 (£1) detected an object not conforming to the required parameters.
02	Opto 2 (20p) detected an object not conforming to the required parameters.
03	IIC communication error talking to the non-volatile memory.
04	Not used – Now replaced with ‘Sync’ message. See below.
05	Opto 1 validated but meter is configured as a 10p or 20p only.
06	Opto 2 validated but meter is configured as a £1 only.
07	Opto 1 validated but St.01 is zero.
08	Opto 2 validated but St.02 is zero.
09	Not used
10	Not used
11	Notused
12	System Error – Mode routine entered with invalid ‘mode’ value.
13	System Error – Temp_mode routine entered with invalid ‘Temp_mode’ value.
14	System Error - ‘_Add_Mc’ entered with zero ‘Coin Value’.
15	System Error – IIC routines internal error.

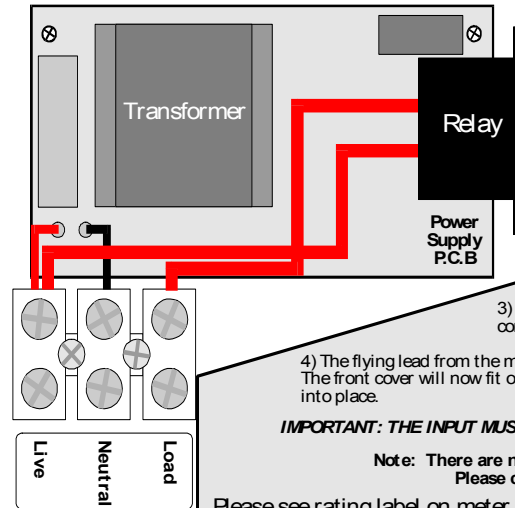
Sync Formerly Er.04 – Software re-synchronising with the 50Hz signal.

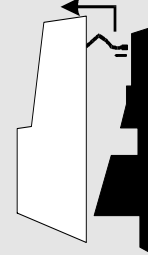
TIM30 Installation & Operating Sheet – Issue 2

This meter is a coin/token operated electronic timer for the control of leisure based electrical appliances, e.g. lighting.

This meter is only intended for use with fixed wiring

THIS METER MUST BE INSTALLED BY A QUALIFIED ELECTRICIAN





1) Unlock the front cover of the meter and lift upwards slightly and away from the wall bracket. Unplug the main p.c.b flying lead from the power supply PCB.

2) The meter should be mounted on a vertical flat surface. Mark position of mounting holes using the wall bracket as a template. Use a 7mm masonry drill bit with rawplugs and 38mm screws or a 3.5mm wood drill bit and 15mm screws depending on the surface on which the meter is to be fixed. Fit the top two screws to the wall leaving the head of the screw approximately 7mm from the surface. Hang the wall bracket on the wall and tighten the screws. Fix the bottom of the wall bracket to the wall using the two remaining screws.

3) Feed the mains & load cables through the back of the meter and connect to the terminal block.

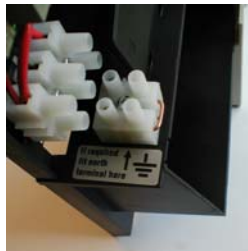
4) The flying lead from the main PCB can now be connected to the power supply PCB. The front cover will now fit onto the wall bracket and drop down slightly where it can be locked into place.

IMPORTANT: THE INPUT MUST BE PROTECTED BY A FUSE RELEVANT TO THE LOAD

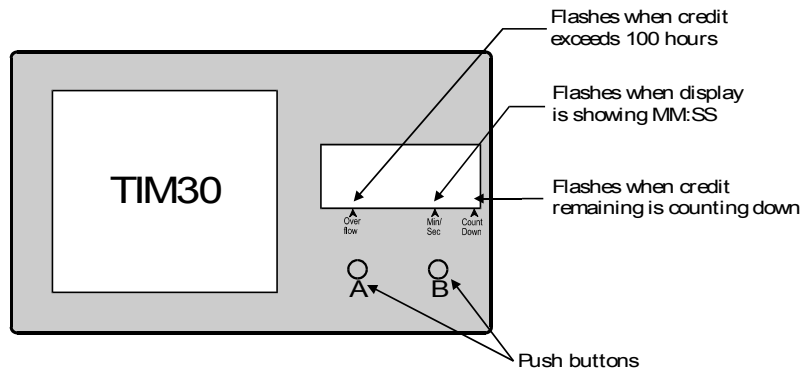
Note: There are no user serviceable parts inside this meter.
Please contact your supplier for service

Please see rating label on meter for voltage & maximum load.

Manufactured in the U.K. to EN60730 2002



Fit earth terminal as shown if required



Switch on power

On power up the meter will briefly show 'P.31.1' then the credit remaining on the meter.

To operate meter

Insert coin/token. The display will briefly show 'Coin'. The display will then show the remaining credit. If the credit is greater than one hour it will be displayed in hours & minutes, e.g.; 2 hours will be displayed as '02:00'. If the credit is less than one hour it will be displayed in minutes & seconds, e.g.; 40 minutes will be displayed as '40:00' and an indicator will flash on the display to show this.

Collector functions

Resettable Money (Token) Counter

When the coin box becomes full, the message 'COLL' (collect) is displayed.

Upon removal of the coin box the display will automatically show the resettable money counter. This will show how much money has been inserted into the meter since the last collection.

When the coin box is reinserted, the money counter will automatically zero before displaying the remaining credit. T

Note: To prevent the money counter from zeroing, insert the coin box with 'B' pressed.

Service Mode

To access service mode remove the coin box, press and release switch 'B' until the display changes to 'St . 01 '. The service mode consists of 4 settings.

St.01 Credit Per Coin 1

Sets the amount of credit given by a 1 pound coin or token (except L1 token). Set in HH.MM or MM.SS

St.02 Credit Per Coin 2

Sets the amount of credit given by a 1€, 50c, 10p, 20p coin or L1 token. Set in HH.MM or MM.SS

St.03 Total Money

Displays the total amount of money/tokens inserted since the last factory reset (This is a read only display and cannot be changed)

St.04 Total Credit

Displays the total amount of credit given since the last factory reset. (This is a read only display and cannot be changed).

To View or Change Settings

Press and release 'B' to step to the desired setting number.

When the required number is showing on the display press and release 'A' to display the current setting. Press and release 'A' to select the digit to be changed then press and release 'B' to alter that digit.

To Clear Credit Remaining

Remove coin box. Display will show re-settable money counter.

Press and release switch B, display will show 'Clr'. Press 'A' & 'B' together and credit will be cleared.

Note: If already in service mode, the display must be returned to show 'Clr' before this feature can be used (Press and release 'B' until 'Clr' is shown).

Credit Save

When available, the credit save is activated by the customer by pressing switch 'B'. This will suspend the credit countdown and turn off the output to the load. The word 'HELD' will be displayed. To resume the countdown and reconnect the load, press switch 'A'.

Override Key Switch (optional)

When the override key is inserted and turned, the load will switch on and the word 'FrEE' will be displayed. This action will also clear any remaining credit from the meter.

ATTENTION

***THIS METER IS CAPABLE OF SWITCHING
A MAXIMUM LOAD OF 30 AMPS (resistive)***

Example:

7000 Watts at 230V AC

**If in doubt please contact your
supplier before installing this meter.**

THIS METER MUST BE INSTALLED BY A QUALIFIED ELECTRICIAN

TIM30

Error Messages

Error (Er.xx)	Description
01	Opto 1 (£1) detected an object not conforming to the required parameters. ¹
02	Opto 2 (20p) detected an object not conforming to the required parameters. ²
03	IIC communication error talking to the non-volatile memory. ³
04	Not used – Now replaced with ‘Sync’ message. See below. ⁴
05	Opto 1 validated but meter is configured as a 10p or 20p only. ⁵
06	Opto 2 validated but meter is configured as a £1 only. ⁶
07	Opto 1 validated but St.01 is zero. ⁷
08	Opto 2 validated but St.02 is zero. ⁸
09	Not used
10	Not used
11	Not used
12	Not used

If any of the error messages 13 – 16 are encountered please contact the LCI technical department.

13	System Error – Mode routine entered with invalid ‘mode’ value.
14	System Error – Temp mode routine entered with invalid ‘Temp mode’ value.
15	System Error - ‘ Add Mc’ entered with zero ‘Coin Value’.
16	System Error – IIC routines internal error.

SynC	Formerly Er.04 – Software re-synchronising with the 50Hz signal. ⁴
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Notes:

- 1** Opto 1 is the coin sensor used to validate £1 coins, L2 & L4 tokens. If the sensor detects that the coin is the wrong size it will show the error message.
- 2** Opto 2 is the coin sensor used to validate 20p, 10p, €1 & 50c coins or L1 tokens. If the sensor detects that the coin is the wrong size it will show the error message.
- 3** This is usually caused by a faulty component (IC4).
- 4** The meter has sensed that the mains supply has been switched off/on. This message is only normally displayed for a second as the meter is switched on or off. If the message is being displayed intermittently there may be a loose connection around the PSU PCB area of the meter.
- 5** Use CFG.1 – digit 1 to set the meter up for the correct coinage.
- 6** Use CFG.1 – digit 1 to set the meter up for the correct coinage.
- 7** Set a value in St.01.
- 8** Set a value in St.02