SUNTRACKER 100 SERIES

1.0 GENERAL INFORMATION

1.1 Application

The Sangamo Suntracker 100 Series is a range of products which offers the functionality of standard switching , solar switching or standard and solar switching combined, all with the space saving advantages of a DIN rail enclosure. In standard mode these products may be used for internal lighting or any switching application. In solar mode these products are commonly used to switch lamp loads by tracking sunset to sunrise times GLOBALLY and switching accordingly. Compatible with 35mm DIN rail mounting the product can easily be used in conjunction with MCBs to BS EN 60898 and standard size enclosures most usually complying to BS5486 Pt 13:1989.

1.2 Common Features

An omission facility to exclude specific days
Automatic Summer/Winter changeover
3 module wide standard DIN rail enclosure
Holiday Mode - to hold programmes for up to 14 days
Permanent on/off facility
Manual Boost - to boost one or both channels for up to 60 mins.
Fully pre-programmed versions available
Voltage free changeover contacts

1.3 Standard Channel Features

3 on/offs per day
Programmable in 15 min increments
Copy day function
Luminaire saving facility on dual channel variant

1.4 Solar Channel Features

The unique flexibility of the Suntracker Series means that in solar mode the products can be programmed to be used anywhere in the world. The products do already have default settings to make programming more simple (i.e. BST/GMT changeover), but the following features / adjustments exist to suit any application.

Early OFF / Early ON Operation
Advanced ON / Late OFF facility
Timed Offset - in order to cater for political time variations

1.5 Model Types

ED124.01 - One channel 24 hour Solar
ED124.02 - Two channel 24 hour Solar
ED107.01 - One channel 7 day Solar
ED107.02 - Two channel 7 day Solar

ED207.01 - One channel 7 day Standard
ED207.02 - Two channel 7 day Standard

ED307.02 - Two channel 7 day Standard/Solar.
Channel 1 is Standard, Channel 2 is Solar

1.6 Technical Data

Type of programming	Daily/Weekly
Operating Voltage	110/230V
Frequency	50 / 60 Hz
Power Reserve/life	4/10 Years
Switching Capacity	16A / 250V Resistive or Inductive

For further load information contact out Technical Helpline.

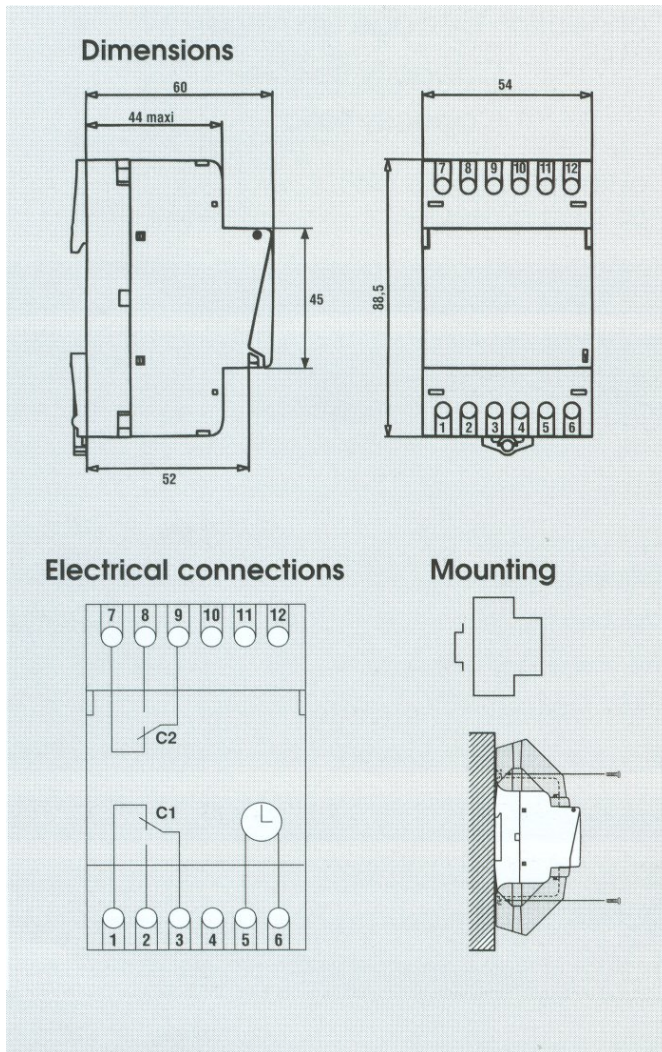|	
General Standard	BS EN 60730 part 2.7
Clock mechanism	Electronic
Accuracy	+/- 0.5 sec per day at +23°C
Ambient Temperature Range	-10°C to 35°C
Storage Temperature Range	-10°C to 35°C
Display	LCD with service life of 10 years
Power Consumption	approx. 4.8W at 230V
Terminal Size	1 to 4mm^{2}
Conformity with EEC 24	Yes
Software	Class A

2.0 INSTALLATION INSTRUCTIONS

2.1 Safety Information

The Sangamo Suntracker 100 Series should only be installed by a fully qualified trained electrician. The I.E.E. wiring regulations must be observed. The supply must be disconnected before wiring commences and a means of isolation with a separation of 3mm in each current path must be provided in the supply to the Suntracker product. The product must not be installed where it may come into direct contact with liquids. The Suntracker range is suitable for fixed wiring applications only.

NOTE:

1.   When installing the product, ensure that the DIN rail is earthed or that it is separated from accessible areas by supplementary insulation.

2.   Ensure that the control is mounted such that only the central raised display/ manual switch portion is the only part of the switch which is directly accessible.

2.2 Diagrams & Dimensions

Dimensions

Electrical connections

Mounting

3.0 PROGRAMMING INSTRUCTION

Before commencing programming, all previous programming information may be cancelled to default by pressing RESET button.
NOTE: A plastic tool or pen should be used to reset the switch and care taken not to press too hard.

ON COMPLETION OF ENTERING SETTINGS AND PROGRAMS, RETURN THE RED TOGGLE SWITCH TO 'AUTO' POSITION, IE NORMAL RUNNING

3.1 Setting Year, Date and Time (Applies to all variants)

YEAR

1. Move the RED slide switch to SET.
2. The LCD should now display 2000 with the pointer below the CALENDAR symbol.
3. Using the + and - keys select the current YEAR.
4. Once the correct YEAR has been selected press the ENTER button.

MONTH

1. The LCD should now display 1 and the pointer should still be below the CALENDAR symbol.
2. Using the + and - key select the current MONTH.(1=Jan, etc)
3. Once the correct MONTH has been selected press the ENTER button.

DAY

1. The LCD should now display 1 and the pointer should still be below the CALENDAR symbol.
2. Using the + and - key select the current DAY. (1=1st, etc)
3. Once the correct DAY has been selected press the ENTER button.

TIME

1. The LCD should now display 12:00 and the pointer should still be below the CLOCK symbol.
2. Using the + and - key select the current TIME. (24hr clock i.e. 14:00 = 2pm)
3. Once the correct TIME has been selected press the ENTER button

3.2 Setting the Latitude and Longitude, Offset Values (For Solar mode on ED124.01, ED124.02, ED107.01, ED107.02 & ED307.02 Channel 2 only)

Please refer to an atlas, or table on page 6 for your locations latitude and longitude values

LATITUDE

1. The LCD should now display +56 and the pointer should be below the LATITUDE GLOBE symbol.
2. Using the + and - key select the current LATITUDE. (see table below)
3. Once the correct LATITUDE has been selected press the ENTER button.

LONGITUDE

1. The LCD should now display -4 and the pointer should be below the LONGITUDE GLOBE symbol.
2. Using the + and - key select the current LONGITUDE.
3. Once the correct LONGITUDE has been selected press the ENTER button.

OFFSET

1. The LCD should now display 0 and the pointer should be below the +/- 180 symbol.
2. Using the + and - key select the OFFSET in 15 minute increments, required away from the selected LONGITUDE. (Should be left at 0 for most UK locations)
3. Once the correct OFFSET has been selected press the ENTER button.

BASIC SET UP IS NOW COMPLETE FOR SOLAR CHANNEL ONLY PRODUCTS - , RETURN THE RED TOGGLE SWITCH TO 'AUTO' POSITION, IE NORMAL RUNNING

3.3 Program, Copy Day ,Day Omit (For standard channel on – ED207.01, ED207.02 & ED307.02 Channel 1 only)

PROGRAMMING

This procedure applies to all standard mode channels within the product.
1. Move the red toggle switch to C1 position (or C2 depending on channel being programmed)
2. Press the day button to select the program day, ie 1=Monday, a pointer is displayed on the LCD under the selected day.
3. The LCD should show 00.00 and ON below the appropriate channel.
4. The LCD should show a pointer in the top left of the display, to indicate program 1
5. Using the + and - keys select the required ON time, then press the enter button.
6 The LCD will show the selected on time and OFF below the appropriate channel
7. Using the + and - keys select the required OFF time, then press the enter button.
8. Program 1 has been entered.
9. The LCD should show the last OFF time, and the pointer on the top left of LCD should have moved right to indicate program 2 being entered.

10. Repeat steps 5-7 to enter all three programs for the chosen day.

11. Press appropriate day button ie 2 = Tuesday, and repeat above steps to program another day.

NB A program can be deleted or not used by making both ON and OFF times the same.
A program cannot go over the midnight boundary. To achieve this you require to enter a program up to 24.00 on day 1 and then from 00.00 on day 2.
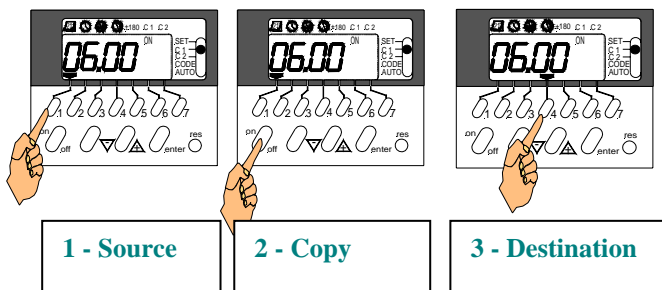*To review programs, move red toggle switch to the appropriate channel, then press day button to select the day to be reviewed, then press the enter button to cycle through the programs.*
On completion return the red toggle switch to Auto position.

COPY DAY

This facility allows you to copy a days programs to one or any number of days to speed up programming.

This procedure applies to all standard mode channels within the product.

1. Move the red toggle switch to C1 position (or C2 depending on channel being programmed)

2. Press the day button to select the source day ie day with programs you want to copy ie 1=Monday

3. Press the on/off key (acts as a copy key) to initiate the copy Press the day button to select the destination day, ie day to be loaded with programs ie 4=Thursday.

4. Repeat steps 2 and 3 as required to copy the same day into other days ie 5=Friday

5. Move the red toggle switch away from C1 position to accept the copy.

| 1 - Source | 2 - Copy | 3 - Destination |

DAY OMIT

Day omit for Dual channel standard models has to be programmed separately.

This procedure applies to all standard mode channels within the product.

1. Move the red toggle switch to C1 position (or C2 depending on channel being programmed)

2. Press the day button to select the program day, ie 1=Monday, a pointer is displayed on the LCD under the selected day.

3. The LCD should show Program ON time and ON below the appropriate channel, with a pointer in the top left of the display to indicate Program 1.

4. Day Omit can be achieved in two ways

5. Method 1 - Review programs, then using + and - keys and enter key make each programs ON and OFF times the same.
Method 2 - Review programs, then using + and - keys and enter key make all program ON and OFF times the same.

EARLY OFF

By using the Early Off facility, the timeswitch can be set to turn OFF EARLIER than sunrise i.e. at midnight.

1. The RED toggle switch should be set at the C1 position (or C2 depending on the channel being programmed).

2. The LCD should show 00:00 and OFF below the appropriate channel.

3. Using the + and - key select the EARLY OFF time required (note this can be no less than sunset or no more than sunrise)

4. This can be adjusted in 15 minutes interval only.

5. Once the correct EARLY OFF has been selected press the ENTER button.

EARLY ON

By using the Early on facility, the switch can be set to turn back on before sunrise

If an EARLY OFF time has been set then an EARLY ON time is required (default 00:00 unless Early OFF time after midnight)

1. The LCD should show 00:00 (or default EARLY OFF time) and ON below the appropriate channel.

2. Using the + and - key select the EARLY ON time required (note this can be no less than EARLY OFF or no more than sunrise)

NB If an EARLY ON is not required advance the time as far as possible then press the ENTER button

3. This can be adjusted in 15 minute intervals only.

4. Once the correct EARLY ON has been selected press the ENTER button.

IF YOU WISH NOT TO BRING LIGHTS ON AGAIN IN THE MORNING – INCREMENT(+) THE EARLY ON TIME AS FAR AS POSSIBLE TO CANCEL THE EARLY ON OPERATION THEN PRESS ENTER.
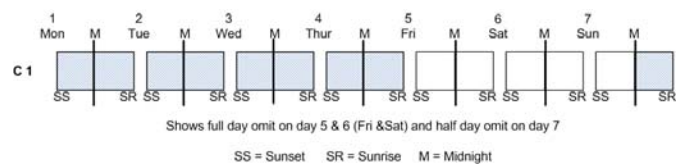
HALF DAY/DAY OMIT

Applies to 7 Day Solar models only
Half Day/Day omit for Dual channel models have to be programmed separately.

A day constitutes from sunset on selected day through to sunrise on the following day.

A half day constitutes from sunset to midnight on the selected day.

Shows full day omit on day 5 & 6 (Fri &Sat) and half day omit on day 7

SS = Sunset   SR = Sunrise   M = Midnight

1. The RED toggle switch should be set at the C1 position (or C2 depending on the channel being programmed).

2. The LCD should show the ON & OFF icons and all the pointers for the 7 days of the week should be active.

3. Select the appropriate DAY's which are to be halfday or day omitted from the programs selected by pressing the numbered buttons below the LCD pointers i.e. 1 = Mon, 2 = Tue, Etc.

4. Press the day buttons appropriately so that to omit the day the LCD pointer has disappeared.   To omit the half day the LCD pointer is flashing.   To include a day the LCD pointer is shown static.

5. Press ENTER to accept the DAY omits selected

3.5 Special Features Programming

The following programming steps have been added to give additional control and flexibility of the product.
These programmes are :
A) Channel Control – Permanent On/Off (Applies to all variants)
B) Luminaire Saving (ED124.01, ED124.02, ED107.01, ED107.02, ED207.01 & ED207.02 only)
C) Early Advance ON and Late OFF (ED124.01, ED124.02, ED107.01, ED107.02, ED307.02 Channel 2 only)
D) Daylight Saving mode (Applies to all variants)

3.5.1 CHANNEL CONTROL – PERMANENT ON/OFF (Applies to all variants)

Single channel products
(ED124.01, ED107.01, ED207.01)

1. Move RED toggle switch to CODE position.
2. The LCD should show CH.
3. Using the + key CHANNEL 1 can be switched permanently ON or permanently OFF
4. By then pressing the - key you can switch the product to normal operation.
5. To select desired operation press ENTER.

Dual channel products
(ED124.02, ED107.02, ED207.02, ED307.02)

1. Move RED toggle switch to CODE position.
2. The LCD should show CH.
3. Pressing the + key the following results with occur.

No. of times pressing + key	LCD shows	Operation
1	CH ON	Permanently ON C1, Normal C2
2	CH OFF	Permanently OFF C1, Normal C2
3	CH ON	Normal C1, Permanently ON C2
4	CH OFF	Normal C1, Permanently OFF C2
5	CH ON ON	Permanently ON C1, Permanently ON C2
6	CH OFF OFF	Permanently OFF C1, Permanently OFF C2

4. By now pressing the - key the operation will go down this list in reverse. i.e. press - once move operation to CH ON ON.
5. Once the desired operation has been set press the ENTER key.
6. To cancel over-ride press – key until LCD displays CH.

3.5.2 LUMINAIRE SAVING FUNCTION - (ED124.01, ED124.02, ED107.01, ED107.02, ED207.01, ED207.02)

Using the Luminaire Saving Function the operator can set up different programmes for the two channels and different omit days daily. At midday the settings for channel 1 are copied to channel 2 and vice-versa except in the case of ED307.02 where the settings for channel 1 are copied to channel 2 and vice-versa weekly at Sunday midday. This balances the life of luminaires and helps in maintenance purposes.

1. Using RED toggle select CODE, then enter until the LCD shows LS 0.
2. Using the + key activate LUMINAIRE SAVING function and the LCD should show LS 1
3. To turn OFF the LUMINAIRE SAVING function press the - key and the LCD should show LS 0.
4. To accept either the function being ON or OFF press ENTER.

3.5.3 ADVANCE ON - (ED124.01, ED124.02, ED107.01, ED107.02 & ED307.02 Channel 2 only)

Applies to both single and dual channel products.
The advance ON function is used to allow the product to switch on up to 60 minutes before sunset. This can be set at 15 minutes interval i.e. 15, 30, 45 60 minutes before sunset. This setting in most dual products applies to both channels.

1. Using RED toggle select CODE, then ENTER until LCD shows A 0.
2. By pressing the + key the product will ADVANCE ON by 15 minutes.
3. By repeatedly pressing + key the ADVANCE ON increases in 15 minutes increments up to a maximum of 60 minutes i.e. 4 presses of + key will = 60 minutes.
4. To reduce the ADVANCE ON time press - key the required number of times up to a minimum of 0 (zero)
5. Once ADVANCE ON has been selected press the ENTER button.

Note: Dual channel solar products with independent advance ON settings are available. In this instance the programming remains the same with an 'ON' icon displayed under the appropriate channel.

3.5.4 LATE OFF - (ED124.01, ED124.02, ED107.01, ED107.02 & ED307.02 Channel 2 only)

The late OFF function is used to allow the product to stay switched on up to 60 minutes after sunrise. This can be set at 15 minute intervals i.e. 15, 30, 45 60 minutes after sunrise. This setting in most dual products applies to both channels.

1. Using RED toggle select CODE, then ENTER until LCD shows L 0.
2. By pressing the + key the product will LATE OFF by 15 minutes.
3. By repeatedly pressing + key the LATE OFF increases in 15 minutes increments up to a maximum of 60 minutes i.e. 4 presses of + key will = 60 minutes.
4. To reduce the LATE OFF time press - key the required number of times up to a minimum of 0 (zero)
5. Once LATE OFF has been selected press the ENTER button.

Note: Dual channel solar products with independent late OFF settings are available. In this instance the programming remains the same with an 'OFF' icon displayed under the appropriate channel.

3.5.5 DAYLIGHT SAVING FUNCTION (Applies to all variants)

If the product is to be used outside of Europe / UK, to ensure the changeover from winter / summer time is achieved the Daylight saving code has to be changed. Also if the product has factory programmed settings these can be activated now.

1. Using RED toggle select CODE, then ENTER until the LCD shows DS 1.
2. Use the -/+ keys to select the daylight saving area of the world to be chosen.

LCD shows	Operation
DS 0	Daylight saving disabled
DS 1	Europe / UK
DS 2	North America
DS 3	Australia

3. Once the desired operation has been set press the ENTER key.
4. Now move RED toggle switch to the AUTO position for normal running.

Default is DS1 and this setting will move clock forward one hour on the last Sunday in March, and back 1 hour on the last Sunday in October.

3.6 Additional programming features

To review any programming made for any on the SET, CH1 or CH2, CODE programming, position the RED toggle switch appropriately and cycle through by pressing the ENTER key. Make changes to any choices previously made as and when appropriate.

3.6.2 HOLIDAY MODE (Applies to all variants)

There may be times where all programs require to be suspended for a period of time i.e. holidays. The following function allows this to happen up to a maximum of 14 days. Please note, holiday mode suspends both channels on a dual channel product.

1. Ensure the RED toggle switch is in the AUTO position.
2. Depress the ENTER key for 5 seconds.
3. The LCD should now show 1 OFF (or 1 OFF OFF for dual channel product)
4. Using the + and - keys select the length of the HOLIDAY MODE (up to 14 days)
5. Once holiday length has been selected press ENTER.
6. The Normal time and OFF Icon will be shown throughout the holiday period.
7. To cancel HOLIDAY MODE move RED toggle switch up to SET and back down to AUTO.

3.6.3 BOOST MODE (Applies to all variants)

The Boost function allows a user to switch the product on (if already off) for a maximum of 60 minutes, i.e. for maintenance or testing etc.

Single Channel products
(ED124.01, ED107.01, ED207.01)

1. The LCD should be showing the clock time and the RED toggle switch should be on AUTO.
2. By pressing the ON / OFF button the LCD should now show Cb60 MAN.
3. Using the + and - minus keys enables you to reduce the boost in 15 minute increments down to 15 minutes.
4. Note : no more than 60 minutes manual boost can be achieved.
5. Once the correct boost time has been reached press the EN-TER key.
6. The MAN boost icon will stay active during the boost period.
7. To cancel the boost at any time press the ON /OFF key until LCD does not display MAN boost icon then press enter.

Dual Channel Products
(ED124.02, ED107.02, ED207.02, ED307.02)

1. The LCD should be showing the clock time and the RED toggle switch should be on AUTO.
2. By pressing the ON / OFF button the LCD should now show Cb60 MAN MAN.   (this setting will boost channels 1 and 2)
3. By pressing the ON / OFF button the LCD should now show Cb60 MAN   (if you wish to boost Channel 1 only)
4. By pressing the ON / OFF button the LCD should now show Cb60   MAN   (if you wish to boost Channel 2 only)
5. For any of the Options above the process to change the boost period is the same.
6. Using the + and - minus keys it enables you to reduce the boost in 15 increments down to 15 minutes.
7. Note : no more than 60 minutes manual boost can be achieved.
8. Once the correct boost time has been reached press the ENTER key.
9. The MAN boost icon will stay active during the boost period
10. To cancel the boost at any time press the ON /OFF key until LCD does not display MAN boost icon then press enter.

Postcode	Latitude	Longitude	Town		Postcode	Latitude	Longitude	Town
AB	57	-2	Aberdeen			53	-9	Limmerick
AL	52	0	St.Albans		LA	54	-3	Lancaster
B	52	-2	Birmingham		LD	52	-2	Llandrinciad
BA	51	-2	Bath		LE	53	-1	Leicester
BB	54	-2	Blackburn		LL	54	-2	Gwent
BD	54	-2	Bradford		LN	53	-1	Lincoln
BH	51	-2	Bournemouth		LS	54	-2	Leeds
BL	54	-2	Bolton			55	-7	Londonderry
BN	51	0	Brighton		LU	52	0	Luton
	53	-8	Birr		M	53	-2	Manchester
BR	51	+1	Bromley		MK	52	1	Milton Keynes
BS	51	-2	Bristol		ML	56	-4	Motherwell
BT	55	-6	Belfast		NE	55	-2	Newcastle
CA	55	-3	Carlisle		NG	53	-1	Nottingham
CB	52	0	Cambridge		NN	52	-1	Northampton
	53	-9	Clane		NP	52	-5	Newport
CF	51	-3	Cardiff		NR	53	+1	Norwich
CH	53	-3	Chester		OL	54	-2	Oldham
CM	52	0	Chelmsford		OX	52	-1	Oxford
	52	-8	Cork		PA	56	-4	Paisley
CO	52	-1	Colchester		PE	53	0	Peterb'gh
CR	51	-1	Canterbury		PH	56	-3	Perth
CT	51	0	Croydon		PL	50	-4	Plymouth
CV	52	-2	Coventry		PO	51	-1	Portsmouth
CW	53	-2	Crewe		PR	54	-3	Preston
DA	52	0	Dartford		RG	51	-1	Reading
	53	-6	Dublin		RH	51	0	Redhill
DD	56	-3	Dundee		RM	51	0	Romford
DE	53	-1	Derby		S	53	-1	Sheffield
DG	55	-4	Dumfries		SA	52	-4	Swansea
DH	55	-2	Durham		SG	52	0	Stevenage
DL	55	-2	Darlington		SK	53	-2	Stockport
DN	54	-1	Doncaster		SL	52	-1	Slough
	55	-8	Donegal		SM	52	0	Sutton
DT	52	-1	Dorchester		SN	52	-2	Swindon
DY	53	-2	Dudley		SO	51	-1	Southampton
EH	56	-3	Edinburgh			54	-8	Sligo
EN	52	0	Enfield		SP	51	-1	Salisbury
EX	51	-4	Exeter		SR	55	-1	Sunderland
FK	56	-4	Falkirk		SS	52	-1	Southend
FY	54	-3	Blackpool		ST	53	-2	Stoke on Trent
G	56	-4	Glasgow		SY	53	-3	Shrewsbury
	53	-9	Galway		TA	51	-3	Taunton
GL	52	-2	Gloucester		TD	55	-3	Galasheils
GU	51	-1	Guildford		TF	53	-2	Telford
HA	52	0	Harrow		TQ	50	-4	Torquay
HD	54	-2	Huddersfield		TR	50	-4	Trord-Cornwall
HG	54	-2	Harrogate		TS	54	0	Cleveland
HP	52	0	Hemel Hempstead.		TW	52	0	Twickenham
HR	52	-3	Hereford		UB	52	0	Southall
HU	54	0	Hull		WA	53	-3	Warrington
HX	54	-2	Halifax		WD	52	0	Watford
IG	52	0	Barking		WF	54	-2	Wakefield
IP	52	+1	Ipswich			53	-6	Wicklow
IV	57	-4	Inverness			53	-6	Wexford
	53	-7	Kilkenny			52	-8	Waterford
KA	56	-5	Kilmarnock		WN	54	-3	Wigan
	52	-10	Kerry		WR	52	-1	Worcester
KT	52	0	Kingston		WS	53	-1	Walsall
KW	59	-3	Kirkwall		WV	53	-2	Wolverhampton
KY	56	-3	Kirkcaldy		YO	54	0	York
L	53	-3	Liverpool		ZE	60	+2	Lerwick

Customer Care Policy

As part of Sangamo's continuous improvement programme, the company operates a Customer Care policy.
This means we welcome your comments and complaints, as it can only help us to improve our services to you our customer.
Sangamo has a policy of continuous improvement therefore the specifications
printed in this leaflet may be subject to change without notice.

**This product has a 2 year guarantee
from date of manufacature**