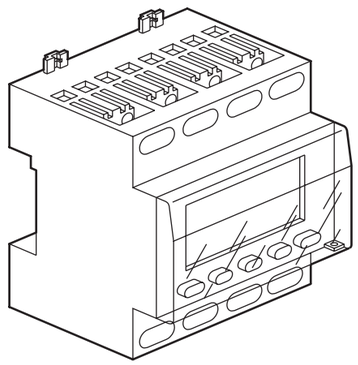
Astro time switch
Rex2000 D41 / D42 Astro

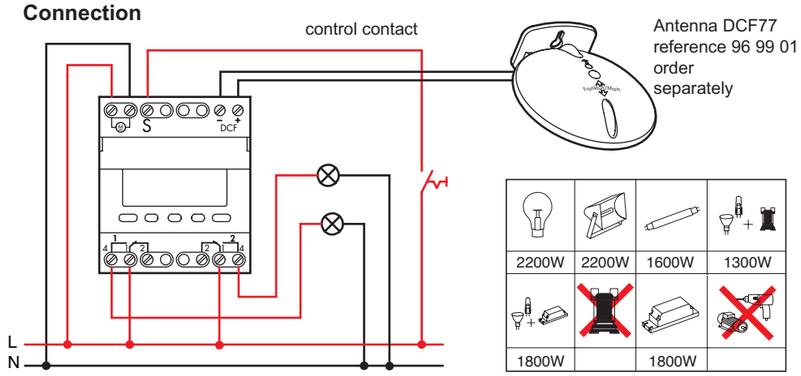
NT 29 18 76 03



Technical data

	94 51 80	A4 51 83	94 51 81	A4 51 84	A4 51 86
Supply voltage:	230V	120V	24V	230V	120V
Frequency:	50/60 Hz				
Consumption:	max. 2W			max. 3W	
Contact rating:	1			2	
	changeover contact 16A 250V~μ cos φ = 1				
Ganggenauigkeit:	±1s/d				
Terminal capacity:	single strand 1,5...4 mm²		multi strand 1,5...2,5 mm²		
Additional switching times:	2				
Battery reserve:	6 years				
Position finding:	resolution 1°				
Control line length:	max. 50m				
Control signal:	230V AC/ca. 2mA 120V AC/ca. 2mA 24V AC/ca. 2mA				
Control impulse:	≥20ms				
Storage ambient:	-20°C to +60°C				
Working ambient:	-20°C to +55°C				

Connection



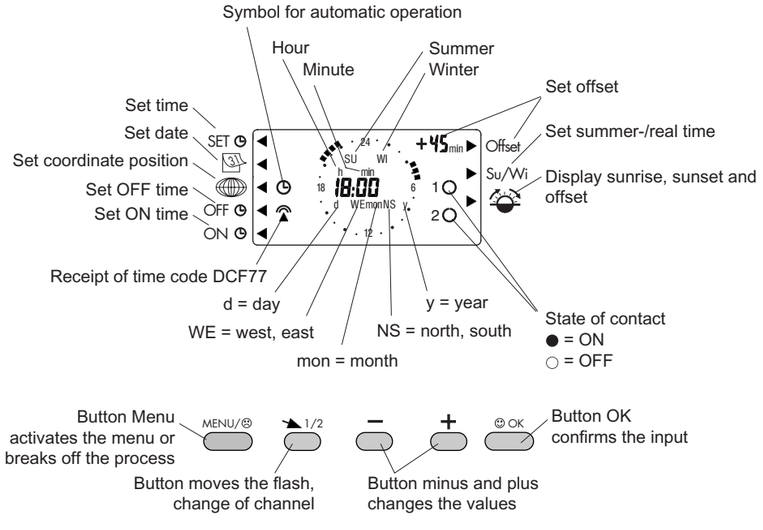
Safety notice

This product may be installed only by a qualified electrician. Non-compliance may result in a fire hazard or electric shocks. Before installation, read the operating instructions and observe the product-specific requirements for the installation location. Use only original spare parts for repair and maintenance. All Legrand products may be opened and repaired only by specially trained Legrand personnel. Unauthorised opening and repair by other persons will invalidate all claims for liability, replacement or warranty services.

Function

The appliance serves as a control device for switching a consumer on and off at dusk and dawn without external light sensors. Using the data entered (date, current time of day and position coordinates) the time of sunrise and sunset is calculated. At these times the connected consumer is switched on or off. The consumer can also be switched on or off at additional programmed switch times. Via an externally installed antenna Ref. 047 50 (to be ordered separately) the time signal DCF77 can be received. Via a control entry the consumer can be switched on in an overriding manner. If no key is operated for 60 seconds during programming, the switch clock returns to the initial position. The switch times are displayed in a segment collar with a grid of 30 minutes. While the data is calculated the segment collar blinks. The summer / winter time switch can be performed either manually or by the switch clock.

Presentation



1. Setting actual time

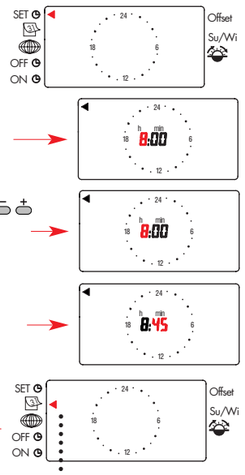
Button MENU activates the menu.

Confirm with button OK.

Set **actual hour** with buttons − + and confirm with button OK.

Set **actual minute** with buttons − +.

Confirm the setting with button OK.



2. Setting actual date

Button MENU activates the menu.

Select set date with button

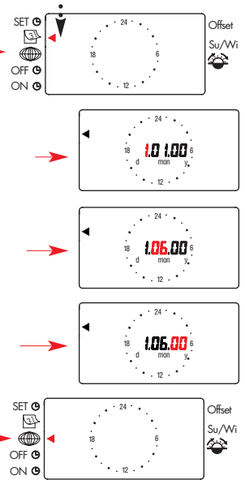
Confirm with button OK.

Set **day** with button − +.
Confirm with button OK.

Set **month** with button − +.
Confirm with button OK.

Set **year** with button − +.

Confirm with button OK.



3. Setting coordinate position

Button MENU activates the menu.
Select the setting coordinate position with button

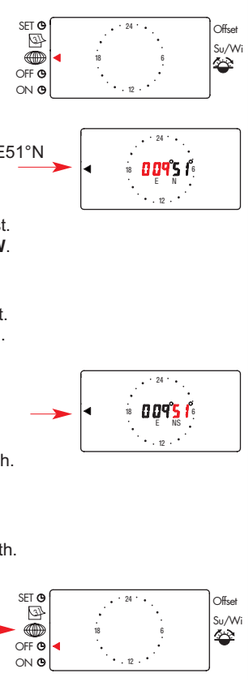
Confirm with button OK.

The manufacturer's setting 9°E51°N will be displayed.
Set degree of longitude with button + in direction west.
Setting from 000°**WE** to 180°**W**.
or
Set degree of longitude with button − in direction east.
Setting from 000°**WE** to 180°**E**.

Confirm with button OK.
Set degree of latitude with button + in direction north.
Setting from 00°**NS** to 90°**N**.

Set degree of latitude with button − in direction south.
Setting from 00°**NS** to 90°**S**.

Confirm with button OK.

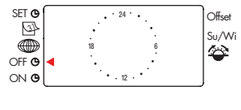


4. OFF = Setting additional OFF time

The function **OFF** switches the connected consumer off at the programmed time of day **exclusively after** sunset.
In case the programmed switch time lies ahead of sunset the switch is not performed.

Button MENU activates the menu.
Select **OFF** with button

Confirm with button OK.



Channel 1

Select with buttons − + **nonE** for no setting

or

MAn for manual setting.

Confirm with button OK.

If chosen **MAn**

Set **hour** with buttons − +.

Confirm with button OK.

Set **minutes** with buttons − +.

Channel 2

Confirm with button OK.

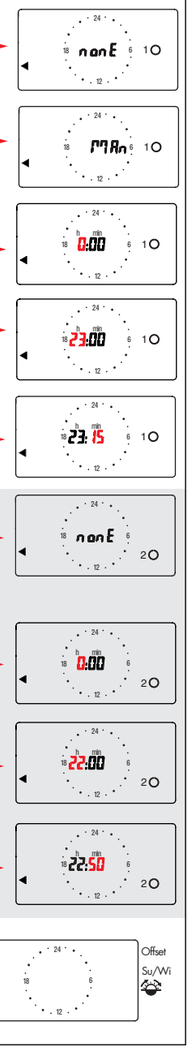
When **MAn** is selected

Set **hour** with buttons − +.

Confirm with button OK.

Set **minutes** with buttons − +.

Confirm with button OK.

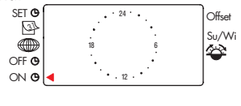


5. ON = Setting additional ON time

The function **ON** switches the connected consumer on at the programmed time **exclusively before** sunrise.
In case the adjusted switch time lies past sunrise the switch is not performed.

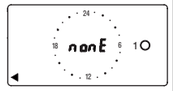
Button MENU activates the menu.
Select **ON** with button

Confirm with button OK.



Channel 1

Select with buttons − + **nonE** for no setting



or

manu for manual setting.

Confirm with button OK.

If chosen **manu**

Set **hour** with buttons − +.

Confirm with button OK.

Set **minutes** with buttons − +.

Channel 2

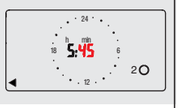
Confirm with button OK.

When **manu** is selected

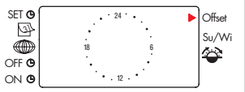
Set **hour** with buttons − +.

Confirm with button OK.

Set **minutes** with buttons − +.

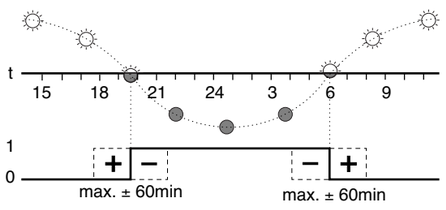


Confirm with button OK.



6. Setting offset

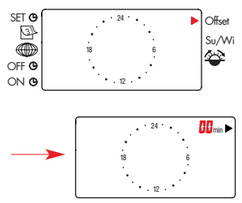
The time switch will switch at the calculated times of sunrise and sunset. By setting a differential time up to ±60 minutes the offset will be displaced to the times of sunrise and sunset.
Example: At +30 minutes differential time the time switch will switch 30 minutes **after** sunrise and 30 minutes **before** sunset.
At -30 minutes differential time the time switch will switch 30 minutes **before** sunrise and 30 minutes **after** sunset.



Button MENU activates the menu.

Select offset with button ▲.

Confirm with button OK.



Set minutes with button + or −.

Confirm with button OK.

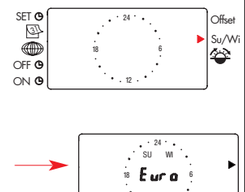
7. Setting summer-/ winter changeover

The automatic changeover depends on your country / area. Choose the appropriate setting for your country / area. If no changeover is required choose **nonE**.

Button MENU activates the menu.

Select Su/Wi with button ▲.

Confirm with button OK.



Choose the region of summer-/winter (see table) with buttons − +.

Confirm with button OK.

Choice	Beginning of summertime	End of summertime	Country / area
Euro	last Sunday in March	last Sunday in October	EU
Gb	last Sunday in March	4th Sunday in October	GB
USA	1ST Sunday in April	last Sunday in October	only North America
nonE	No changeover	No changeover	
manu	**Free programming summer-/winter-changeover** **Nothern hemisphere** Enter the beginning of summer time applicable to your position / your country as well as the end of summer time. The weekday is automatically matched to the date. **Southern hemisphere** On the southern hemisphere the beginning and end of summer time has to be adjusted for the **same** year. In the following years the time switch will always be performed on the adjusted weekday, irrespective of the date.		

Setting beginning of summertime

Set **day** with buttons − +

and confirm with button OK.

Set **month** with buttons − +

and confirm with button OK.

Set **year** with buttons − +

and confirm with button OK.

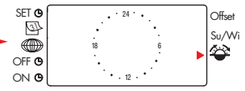
Setting end of summertime

Set **day** with buttons − +

and confirm with button OK.

Set **month** with buttons − +.

Confirm with button OK.

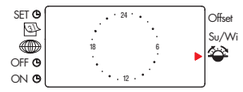


8. Display times of sunrise, sunset and switch time shift

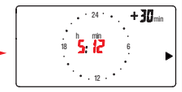
The times are displayed alternately in a 2 seconds cycle.

Button MENU activates the menu.

Select symbol with button ▲.



Confirm with button OK.

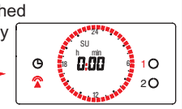


Finish the inquiry with button MENU.

9. Radio receiving DCF77

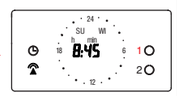
Only when the antenna is connected

After the working voltage is established or after a reset the clock immediately tries to receive the time signal.
The antenna symbol blinks.



If the time switch clock recognizes a connected antenna blinking of the receiving waves signals the running data transfer.

When data reception is completed the antenna symbol is displayed continuoulsy.



At each full hour the clock tries to receive the time signal again.

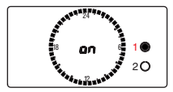
In the absence of an antenna connection the antenna symbol is extinguished and the current time of day as well as the date have to be adjusted manually.

10. Continuous switching ON / OFF

Continuous switching ON

Applicable to 2-channel version. Select channel with key ▲.

Press button + for 2 seconds.
The circular segment display and **on** will be indicated.
Terminating continuous switching

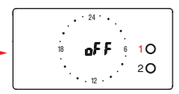


Press button MENU.

Continuous switching OFF

Applicable to 2-channel version. Select channel with key ▲.

Press button − for 2 seconds.
The circular segment display will not be displayed and indication **off**.
Terminating continuous switching



Press button MENU.

11. Manual switch On / Off

Applicable to 2-channel version. Select channel with key ▲.

Premature switch on with key + or premature switch off with key −.

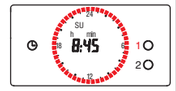
End manual switch

Discontinue the manual switch with the key MENU or with the next switching instruction of the clock.

Reset

Reset 1 Switching program remains

Press buttons MENU − + and let free together.



Reset 2 **Attention!** The controller memory will be deleted and all entered data is lost.
The clock is designed in such a way that a Reset 2 is not needed.
The details for Reset 2 should be input without an unduly long pause, as otherwise the battery will run down and a power reserve cannot be guaranteed.

The setting of actual time and time-of-day are indispensable for calculation of sunrise and sunset.
Do not forget to actualize all other data (date, coordinate position etc.).

Press buttons MENU − + simultaneously.

Release button MENU.

Hold down buttons − + for another 2 seconds.

After buttons − + are released **tIME** appears in the display

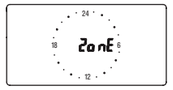
Confirm with button OK.

Set actual **hour** with buttons − +

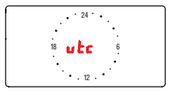
and confirm with button OK.

Set actual **minute** with buttons − +.

Confirm the setting with button OK.
The display **ZonE** appears.



Confirm with button OK.



Setting time-of-day

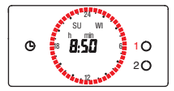
To set the time-of-day use the enclosed **time-of-day map**. Locate for your area the difference of time to UTC (**U**niversal **t**ime **c**oordinated) and set this value with buttons − +.

Set a positive value with button +.
Example: UTC +1h = central european time

or

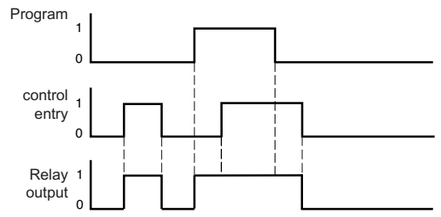
Set a negative value with button −.
Example: UTC -1h

Confirm with button OK.
While the circular segment display is blinking the sunrise and sunset will be calculated.



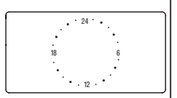
Action chart control entry

The control signal has to sit close ≥ 20ms to the control entry in order to trigger a switching instruction for **both channels** (if applicable).



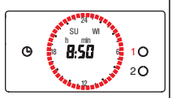
Mains failure

When mains failure happens no information is displayed.

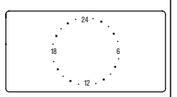


The time switch executes no switching operations.

All inputs are possible.
After pressing a button the circular segment display is blinking in automatic operation.



One minute after last button operation the information in the display will no longer be shown.



- Zeitzonenkarte
- Carte des fuseaux horaires
- Time-of-day map
- Tijdszone kaart
- Carta dei fusi allegata
- carta de husos horarios

-12:00 | -11:00 | -10:00 | -9:00 | -8:00 | -7:00 | -6:00 | -5:00 | -4:00 | -3:00 | -2:00 | -1:00 | UTC | +1:00 | +2:00 | +3:00 | +4:00 | +5:00 | +6:00 | +7:00 | +8:00 | +9:00 | +10:00 | +11:00 | +12:00

Reykjavik 21 W, 64 N
Helsinki 25 E, 60 N
Oslo 11 E, 60 N
Sankt Peterburg 30 E , 60 N
Stockholm 18 E, 59 N
Moskva 38 E, 56 N
Perm 56 E, 58 N
Omsk 73 E, 55 N
Novosibirsk 83 E, 55 N
Krasnojarsk
Irkutsk 104 E, 52 N
Dublin 6 W, 53 N
London 0 WE, 51 N
Berlin 13 E, 52 N
Warszawa 21 E , 52 N
Kiev 31 E , 50 N
+ 3:00
Saratov 46 E, 52 N
Praha 14 E , 50 N
Paris 2 E, 49 N
Zürich 8 E, 47 N
Wien 16 E, 48 N
Ulaanbaatar 107 E, 48 N
Harbin 127 E, 46 N
Alma Ata 77 E, 43 N
Roma 12 E, 42 N
Porto 9 W, 41 N
Madrid 4 W, 40 N
Istanbul 29 E, 41 N
Shenyang 123 E, 42 N
Beijing 116 E, 40 N
Lisboa 9 W, 39 N
Tunis 10 E, 37 N
Athinai 24 E, 38 N
Adana 35 E, 37 N
Kabul 69 E, 35 N
Lanzhou 104 E, 36 N
Xi'an 109 E, 34 N
Seoul 127 E, 38 N
Tokyo 140 E, 36 N
El Djazair 3 E , 37 N
Ismir 27 E, 38 N
Tehran 51 E, 36 N
Islamabad 73 E, 34 N
Osaka 135 E, 35 N
Casablanca 8W, 34N
Tarabulus 13 E , 33 N
Baghdad 44 E, 33 N
Delhi 77 E , 29 N
Chongqing 107 E, 30 N
Shanghai 121 E, 31 N
Al-Qahira 31 E, 30 N
Abu Dhabi 54 E, 24 N
Karachi 67 E, 24 N
Kathmandu 85 E, 28 N
Taipei 121 E, 25 N
Ar-Riyad 47 E, 25 N
Kanpur 80 E, 26 N
Jiddah 39 E, 21 N
Muscat 58 E, 24 N
Ahmadabad 73 E, 23 N
Kolkata 88 E, 23 N
Hanoi 106 E, 21 N
Hong Kong 114 E, 22 N
Mumbai 73 E, 19 N
Bangkok 101 E, 14 N
Manila 121 E, 15 N
Chennai 80 E, 13 N
Cairns 146 E , 17 S
Antananarivo 48 E , 19 S
Windhoek 16 E, 22 S
Johannesburg 28 E, 26 S
Brisbane 153 E, 27 S
Durban 31 E, 30 S
Capetown 18 E, 34 S
Perth 116 E, 32 S
Sydney 151 E , 34 S
Adelaide 139 E , 35 S
Canberra 149 E , 35 S
Melbourne 145 E , 38 S
Auckland 175 E, 37 S
Wellington 175 E, 41 S
Vancouver 123 W, 49 N
Calgary 114 W, 51 N
Québec 71W, 47 N
Seattle 122 W, 48 N
Toronto 79 W, 44 N
Montreal 74W, 45 N
Chicago 88 W, 42 N
Detroit 83 W, 42 N
New York 74 W, 41 N
Denver 104 W, 39 N
Minneapolis 97 W, 39 N
Philadelphia 75 W, 40 N
San Francisco 122 W, 38 N
Los Angeles 118 W, 34 N
Dallas 97 W, 33 N
Atlanta 84 W, 34 N
Houston 95 W, 30 N
Miami 80W, 26 N
Monterrey 100 W, 26 N
Havana 82 W, 23 N
Guadalajara 103 W, 21 N
Mexico City 99 W, 19 N
Santo Domingo 70 W, 19 N
La Paz 68 W, 16 S
Brasilia 48 W, 16 S
Rio de Janeiro 43 W , 23 S
Sao Paulo 47 W, 24 S
Cordoba 64 W, 31 S
Santiago 71 W, 33 S
Buenos Aires 58 W, 35 S
Concepcion 73 W, 37 S

N
W
E
S

Austria

Klagenfurt	14° E	47° N
Salzburg	13° E	48° N
Linz	14° E	48° N
Wien	16° E	48° N
Graz	15° E	47° N

Benelux

Amsterdam	5° E	52° N
Bruxelles	4° E	51° N
Luxembourg	6° E	50° N

Danmark

København	13° E	56° N
Ålborg	10° E	57° N
Århus	10° E	56° N
Esbjerg	8° E	55° N

Germany

Aachen	6° E	51° N
Berlin	13° E	52° N
Düsseldorf	7° E	51° N
Dresden	14° E	51° N
Emden	7° E	53° N
Flensburg	9° E	55° N
Frankfurt	9° E	50° N
Freiburg	8° E	48° N
Hamburg	10° E	54° N
Hannover	10° E	52° N
Kassel	9° E	51° N
Köln	7° E	51° N
Leipzig	12° E	51° N
München	12° E	48° N
Münster	8° E	52° N
Nürnberg	11° E	49° N
Passau	13° E	49° N
Rostock	12° E	54° N
Soest	8° E	52° N
Stuttgart	9° E	49° N

France

Bordeaux	1° W	45° N
Brest	5° W	48° N
Calais	2° E	51° N
Dijon	5° E	47° N
La Rochelle	1° W	46° N
Le Havre	0° WE	49° N
Le Mans	0° WE	48° N
Lille	3° E	51° N
Limoges	1° E	46° N
Lyon	5° E	46° N
Marseille	5° E	43° N
Mulhouse	7° E	48° N
Nancy	6° E	49° N
Nantes	2° W	47° N
Paris	2° E	49° N
Perpignan	3° E	43° N
Strasbourg	8° E	49° N
Toulouse	1° E	44° N

Finland

Rovaniemi	26° E	66° N
Oulu	25° E	65° N
Kajaani	28° E	64° N
Tampere	24° E	61° N
Turku	22° E	60° N
Helsinki	25° E	60° N

Great Britain

Aberdeen	2° W	57° N
Belfast	6° W	55° N
Glasgow	4° W	56° N
Newcastle	6° W	54° N
Liverpool	3° W	53° N
Manchester	2° W	53° N
Sheffield	1° W	53° N
Birmingham	2° W	52° N
London	0° WE	51° N
Plymouth	4° W	50° N

Ellas (Greece)

Saloniki	23° E	41° N
Athinai	24° E	38° N

Hungary

Budapest	19° E	47° N
Gyor	18° E	48° N
Szombathely	17° E	47° N
Pecs	18° E	46° N
Szeged	20° E	46° N
Debrecen	22° E	48° N
Miskolc	21° E	48° N
Salgotarjan	20° E	48° N

Italy

Cagliari	9° E	39° N
Milano	9° E	45° N
Venézia	12° E	45° N
Génova	9° E	44° N
Roma	12° E	42° N
Nápoli	14° E	41° N
Bari	17° E	41° N
Palermo	13° E	38° N

Ireland

Dublin	6° W	53° N
Cork	8° W	52° N
Galway	9° W	53° N

Norway

Narvik	17° E	68° N
Trondheim	10° E	63° N
Bergen	5° E	60° N
Oslo	11° E	60° N
Mo i Rana	14° E	66° N

Poland

Gdansk	19° E	54° N
Katowice	19° E	50° N
Kraków	20° E	50° N
Poznan	17° E	52° N
Szczecin	15° E	53° N
Warszawa	21° E	52° N

Portugal

Lisboa	9° W	39° N
Faro	8° W	37° N
Porto	9° W	41° N

Turkey

Adana	35° E	37° N
Adapazari	30° E	41° N
Ankara	33° E	40° N
Antalya	31° E	37° N
Canakkale	26° E	40° N
Gaziantep	37° E	37° N
Istanbul	29° E	41° N
Mugla	28° E	37° N
Samsun	36° E	41° N
Izmir	27° E	38° N

Espana

Barcelona	2° E	41° N
Madrid	4° W	40° N
Palma	3° E	40° N
Selvilla	6° W	37° N
Valencia	0° WE	39° N

Sweden

Goteborg	12° E	58° N
Halmstad	13° E	57° N
Linkoping	16° E	58° N
Orebro	15° E	59° N
Stockholm	18° E	59° N
Gavle	17° E	61° N
Umea	20° E	64° N
Lulea	22° E	66° N

Switzerland

Bern	7° E	47° N
Basel	8° E	47° N
Sankt Gallen	9° E	47° N
Lugano	9° E	46° N
Zürich	9° E	47° N