

> Twilight switches

IC100
Adjustable from 2 to 100 lux.
It comes with a wall-mounted cell.




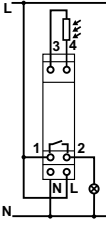
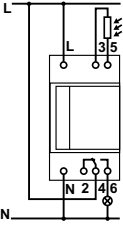
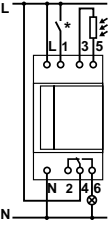
IC2000
Adjustable from 2 to 2000 lux. It comes with a standard wall-mounted or switchboard cell.

IC2000P+
It has 3 customisable pre-set programs and 3 setting ranges from 2 to 2100 lux. Its 4 keys and large screen facilitate its programming. It comes with a wall-mounted cell.

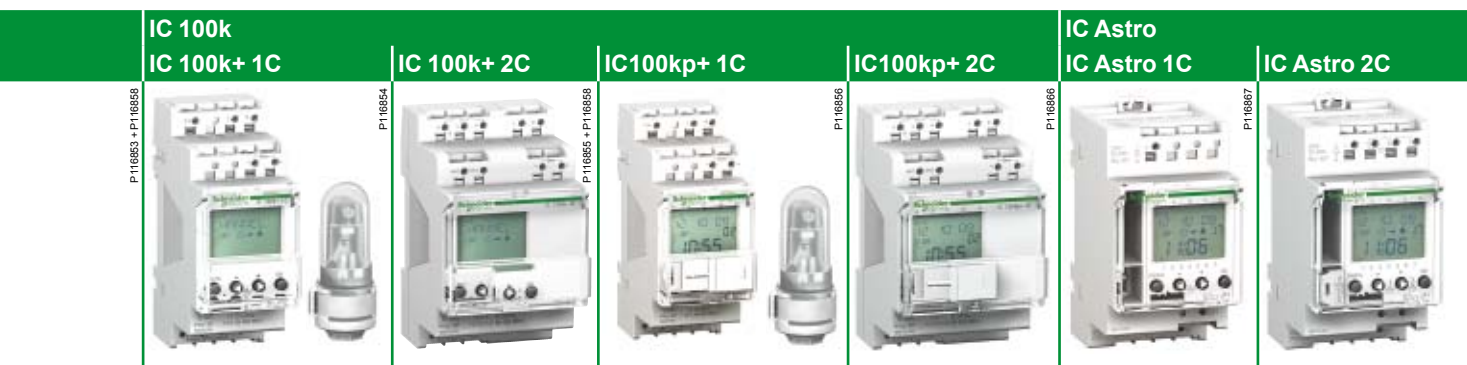
IC Astro
It operates without photoelectric cell and calculates sunrise and sunset times according to its geographic position. It can be customised by using its programming function.

IC 100k
Adjustable from 2 to 99000 lux.
Its 4 keys and large screen facilitate its programming. It comes with a digital wall-mounted or a switchboard cell.

Selection table

	IC100	IC2000	IC2000P+	
	 <p>P11637 + P8237</p>	 <p>P11639 + P16859 + P16856</p>	 <p>P11640 + P8237</p>	
Function	<p>The IC100 controls closing of a contact when brightness decreases and drops below the selected threshold. It controls opening of a contact when brightness increases and rises above the selected threshold</p>	<p>The IC2000 control closing of a contact when brightness decreases and drops below the selected threshold. They control opening of a contact when brightness increases and rises above the selected threshold</p>	<p>The IC2000P+ controls lighting according to brightness and time. If brightness drops below the set threshold (twilight function: IC) and if the time program allows relay closing (time switch function), then the lighting circuit is activated</p>	
Wiring diagrams	 <p>P16857</p>	 <p>P16858</p>	 <p>P16859</p>	
Catalogue numbers	15482	CCT15284	CCT15368	15483 ⁽¹⁾
Technical specifications				
Delivered with	Wall-mounted cell	Switchboard cell (CCT15281)	Wall-mounted cell (CCT15268)	Wall-mounted cell
Optional accessories	Wall-mounted cell (CCT15268)	Switchboard cell (CCT15281) Wall-mounted cell (CCT15268)	Wall-mounted cell (CCT15268) Switchboard cell (CCT15281)	Wall-mounted cell (CCT15268)
Adjustable brightness threshold	2 to 100 lx	2 to 2000 lx		Range 1: 2 to 50 lx Range 2: 60 to 300 lx Range 3: 350 to 2100 lx
Voltage rating (Ue) (+10 %, -15 %)	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz		230 V AC, 50/60 Hz
Consumption	6 VA	6 VA		3 VA
Operating temperature	-20°C to +50°C	-25°C to +50°C		-20°C to +50°C
Width (9 mm modules)	2	5		5
Insulation class	Class II	Class II		Class II
Degree of protection	IP20B	IP20B		IP20B
Output contact rating $\cos \varphi = 1$ (under 250 VAC)	16 A	16 A		16 A
$\cos \varphi = 0.6$	10 A	10 A		10 A
Time delays (On and Off)	20 s (On) 80 s (Off)	≥ 60 s		Adjustable from 20 to 140 s (80 s by default)
Operating accuracy	–	–		< ±1 s / day at 20 °C.
Monitoring indicator light, not time delayed, lit when brightness is less than the threshold	Red	Red		–
Contact switching indicator light	Green	Green		–
LCD liquid crystal display	–	–		Back-lit
Program saving by lithium battery	–	–		■
Operating reserve	–	–		5-6 years
Location for instruction manual on front face	–	■		■
Cabling test function with a push-button on front face	–	■		–
Number of channels	1	1		1
Control by brightness detection	■	■		■
Coupling with weekly programming	–	–		42 switching times Minimum switching: 1 min Switching accuracy: 1 s
Control by calculation of sunrise/sunset times	–	–		–

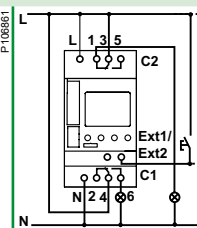
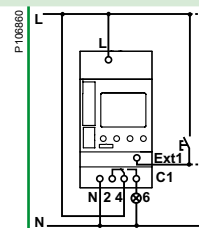
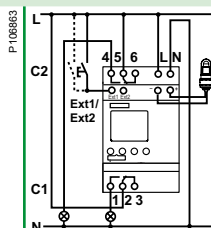
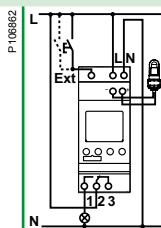
Languages: (1) English, french, spanish, italian, german, portuguese, swedish, dutch, finnish, norwegian/danish. (2) English, french, spanish, portuguese, hungarian, polish, romanian



The IC 100k+ 1C/2C control closing of a contact when brightness decreases and drops below the selected threshold. It controls opening of a contact when brightness increases and rises above the selected threshold

The IC100kp+ 1C/2C control lighting according to brightness and time. If brightness drops below the set threshold (twilight function: IC) and if the time program allows relay closing (time switch function), then the lighting circuit is activated

The IC Astro astronomic programmable twilight switch is used to start and stop an electric load (e.g. lighting) according to sunrise and sunset times, without a brightness detector. Sunrise and sunset times are calculated automatically by the IC Astro according to the geographic parameters configured by the user



CCT15250 (2)
CCT15251 (3)

CCT15252 (2)
CCT15253 (3)

CCT15490 (2)
CCT15491 (3)







CCT15492 (2)
CCT15493 (3)

CCT15223 (2)
CCT15224 (3)

CCT15243 (2)
CCT15244 (3)

Digital wall-mounted cell (CCT15260)	Digital wall-mounted cell (CCT15260) Memory key (alone) (CCT15861)	–	Memory key (alone) (CCT15861)
Digital wall-mounted cell (CCT15260) Digital switchboard cell (CCT15261) Programming kit for PC (CCT15860)	Digital wall-mounted cell (CCT15260) Digital switchboard cell (CCT15261) Programming kit for PC (CCT15860) Memory key (alone) (CCT15861)	–	Programming kit for PC (CCT15860) Memory key (alone) (CCT15861)
1 to 99000 lx	1 to 99000 lx	–	According to sunrise/sunset times
230 V AC, 50/60 Hz	100-240 V AC, 50/60 Hz	230 V AC, 50/60 Hz	100-240 V AC, 50/60 Hz
3 VA	3 VA	3 VA	3 VA
-30°C to +50°C	-30°C to +50°C	-30°C to +50°C	-25°C to +45°C
4	6	4	6
Class II	Class II	Class II	Class II
IP20C	IP20C	IP20C	IP20B
16 A	16 A	16 A	16 A
10 A	10 A	10 A	10 A
Adjustable from 0 to 59.59 min.	–	–	Difference in sunset and/or sunrise times adjustable separately by ±120 min.
–	–	–	–
–	–	–	–
–	–	–	–
Back-lit	Back-lit	–	Back-lit
■	■	–	■
10 years	10 years	–	6 years
–	–	–	–
–	–	–	–
1	2	1	2
■	■	–	–
–	–	–	–
–	84 switching times Operating accuracy: $\pm 1\text{ s}$ / day at 20°C Minimum switching: 1 min Switching accuracy: 1 s	–	84 switching times (not including sunrise/sunset) Minimum time between 2 switching operations: 1 min. Switching accuracy: 1 s Time accuracy: ±1 s / day
–	–	–	■

Accessories selection table

	Wall-mounted cell	Switchboard cell	Programming kit for PC	Memory key	Digital wall-mounted cell	Digital switchboard cell	
							
Function	Wall-mounted photoelectric cell	Switchboard photoelectric cell	Consists of a programming device, a memory key, a CDROM and a 2 m USB cable	Saving and duplicating programs	Digital wall-mounted photoelectric cell	Digital wall-mounted photoelectric cell	
Mounting	<ul style="list-style-type: none"> Delivered with its fixing device for IC100 and IC200P+ Replaced by CCT15268 for spare part use Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 25 m 	Delivered with 1 m cable and its fixing device	<ul style="list-style-type: none"> Delivered with its fixing device Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 100 m 	–	–	<ul style="list-style-type: none"> Delivered with its fixing device. Cell connection: <ul style="list-style-type: none"> by double insulation 2-conductor cable: <ul style="list-style-type: none"> - 0.5 - 2.5 mm² for CCT15260 - 0.25 - 1.5 mm² for CCT15261 Not to be laid next to mains cables or water ducts, maximum length: <ul style="list-style-type: none"> - 100 m (2 x 1.5 mm²) - 50 m (2 x 0.75 mm²) 	
Catalogue no.	–	CCT15268	15281	CCT15860	CCT15861	CCT15260	CCT15261

Technical specifications

	IP54	IP65	IP54	–	–	IP55	IP66
Degree of protection	IK05	–	IK05	–	–	–	–
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	–	–	-40°C to +70°C	-40°C to +70°C
Horizontally orientable	–	–	90°	–	–	90°	90°

Load table

Type of lighting (230 V AC)	Max. power (for higher power, relay with a contactor)				
	IC100	IC2000	IC2000P+	IC Astro	IC 100k
Incandescent and halogen lamps	2300 W	2300 W	2300 W	2300 W	2600 W
Non-corrected / serial-corrected / dual mounted fluorescent tubes with conventional ballast	2300 VA	2300 VA	26 x 36 W, 20 x 58 W, 10 x 100 W	26 x 36 W, 20 x 58 W, 10 x 100 W	26 x 36 W, 20 x 58 W, 10 x 100 W
Parallel corrected fluorescent tubes with conventional ballast	400 VA	400 VA	10 x 36 W, 6 x 58 W, 2 x 100 W	10 x 36 W, 6 x 58 W, 2 x 100 W	10 x 36 W, 6 x 58 W, 2 x 100 W
Fluorescent tubes with electronic ballast	–	–	9 x 36 W, 6 x 58 W	9 x 36 W, 6 x 58 W	650 VA max.
Dual-mounted fluorescent tubes with electronic ballast	300 VA	300 VA	5 x (2 x 36 W), 3 x (2 x 58 W)	5 x (2 x 36 W), 3 x (2 x 58 W)	–
Fuocompact lamps with electronic ballast	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W	22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W
Fuocompact lamps with conventional ballast	1500 VA	1500 VA	–	–	–
Parallel-corrected mercury and sodium vapour lamps	400 VA	400 VA	250 VA	250 VA	800 VA max. (80uF)
Non-corrected/ serial-corrected mercury and sodium vapour lamps	1000 VA	1000 VA	–	–	–
Motor	–	–	–	–	2300 VA max.

Specific technical data

IC2000P+	
External input	
Voltage rating (Ue)	230 V AC, +10 %, -15 %
Frequency	50/60 Hz
Input current	≤ 2.5 mA
Consumption	≤ 0.4 mW
Cable length	≤ 100 m
IC Astro	
Programming longitude	-180° (East) to +180° (West) in steps of 1°
Programming latitude	-90° (South) to +90° (North) in steps of 1°
External inputs for external control with a standard switch or a push-button	<ul style="list-style-type: none"> ■ 1 input "Ext1" for IC Astro 1C ■ 2 inputs "Ext1" and "Ext2" for IC Astro 2C □ consumption: < 0.5 mA □ cable length: ≤ 100 m
Programming accessories	<ul style="list-style-type: none"> ■ Programming kit for PC consists of a programming device, a memory key, a CDROM and a 2 m USB cable ■ Memory key for saving and duplicating programs
IC 100k, IC Astro	
Programming accessories	<ul style="list-style-type: none"> ■ Programming kit for PC consists of a programming device, a memory key, a CDROM and a 2 m USB cable ■ Memory key for saving and duplicating programs
Memory key delivered on front face for IC100kp+ 1C, IC100kp+ 2C and IC Astro	
External inputs	
External inputs for external control with a standard switch or a push-button	<ul style="list-style-type: none"> ■ 1 input "Ext" for 1 channel versions ■ 2 inputs "Ext1" and "Ext2" for 2 channels versions
Voltage rating (Ue)	<ul style="list-style-type: none"> ■ 230 V AC, +10 %, -15 % for 1 channel versions ■ 100-240 V AC +10 %, -15 % for 2 channels versions
Frequency	50/60 Hz
Input current	≤ 0.5 mA
Consumption	≤ 130 mW
Cable length	≤ 100 m

IC2000P+

The IC 2000P+ uses its time programming to define lighting On and Off periods:

- According to three pre-set time programs:
 - "DAYPROG": On time programming from 7 am to 8 pm a validation of the IC function from 7 am to 8 pm,
 - "NIGHTPROG": On time programming from 5 am to 8 am and from 6 pm to 11 pm a validation of the IC function on these two operating periods,
 - "EMPTYPROG": Off time programming throughout the day a no validation of the IC function. These programs can be modified if necessary.
- According to a customised operating period, with possibility of copying to the other days. It is equipped with the following functions:
 - consideration of periods of absence (holidays),
 - temporary or permanent On or Off override,
 - remote control of lighting override by NO external contact,
 - consideration of change to "summer/winter" time, automatic or manual,
 - permanent liquid crystal display: of time and minutes, of day of the week, of the contact output status and current program.

Example

Lighting of a shop window, in the evening, at a time variable according to brightness and switch-off at a set time (e.g. 11 pm). Then in the morning, lighting at a set time (e.g. 4 am) and switch-off at a time variable according to brightness (see Fig. 1).

Configuration

This consists of recording in the memory:

- The language.
- The year, month, day and time.
- One of the 3 pre-set programs:
 - "DAYPROG": "On" time programming from 7 am to 8 pm → validation of the IC function from 7 am to 8 pm,
 - "NIGHTPROG": "On" time programming from 5 am to 8 am and from 6 pm to 11 pm → validation of the IC function on these two operating periods,
 - "EMPTYPROG": "Off" time programming throughout the day → no validation of the IC function. These programs can be modified.
- The brightness threshold. Once this phase is over, your IC 2000P+ operates in AUTO mode according to the items you have chosen.

Programming

The IC2000P+ is used to manage time programs. It allows:

- Creation of a new program with the possibility of copying to the other days.
- Viewing programs in memory.
- Modification of a program in memory, of the time, date, summer/winter time.
- Partial or total deletion of the program (date, time and language are kept).
- Modification of the brightness threshold.
- Separate setting of the time delay on switch-on and switch-off.

Move to On/Off override

- Press briefly (< 2 s) and simultaneously the 2 keys "-", "+" (value setting and navigation keys) on the front face to move to "MAN ON" or "MAN OFF".
- Press the keys for more than 2 s to move to "PERM ON" or "PERM OFF".
- Supply of terminal 1 overrides the IC 2000P+ output to the "On" position.

This external override takes priority over the product On/Off override function (see Fig. 2, 3).

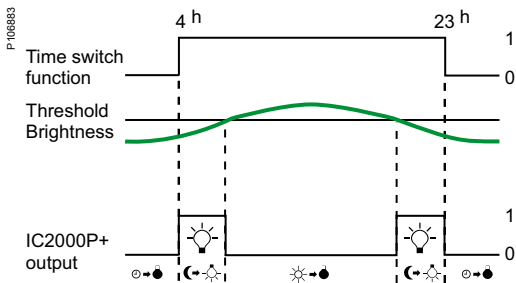


Fig. 1.

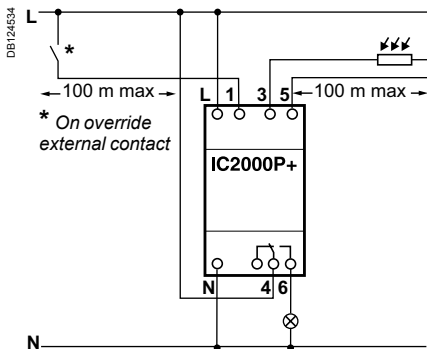


Fig. 2.

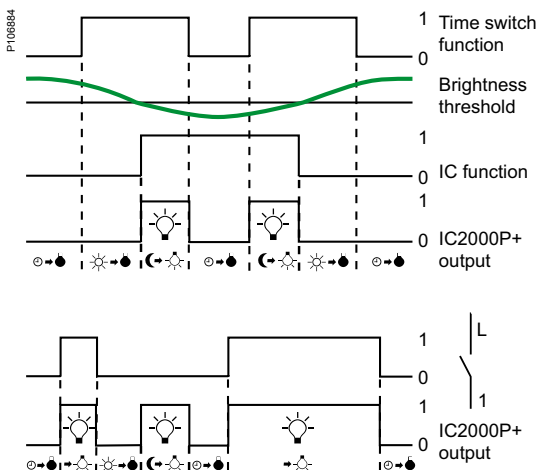


Fig. 3.

IC Astro

The IC Astro is configured according to the place of installation.

- The place of installation of the IC Astro can be configured:
 - either by selecting a country and a town,
 - or by its geographic coordinates (latitude, longitude).
- The IC Astro allows:
 - addition or deletion of a switch-off/switch-on switching operation (Off-On) between the sunset and sunrise times,
 - different programmes each day,
 - difference in sunset and/or sunrise times, adjustable separately by ± 120 min. according to local constraints (mountains, buildings, etc.),
 - consideration of periods of absence (holidays),
 - remote control of lighting override by external standard switch or push-button via the external input (1 external input per channel),
 - re-initialisation of programmes,
 - automatic switching to "summer-winter" time,
 - permanent display by liquid crystals: hours and minutes, day of the week, contact output status, and current programme,
 - manual waiver of the lighting On/Off programme, permanently or temporarily (up to the next switching operation).
 - back-lighting of the screen.

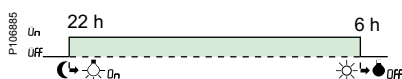


Fig. 3.

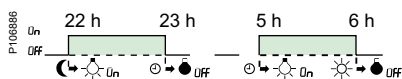


Fig. 4.

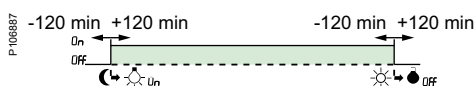


Fig. 5.

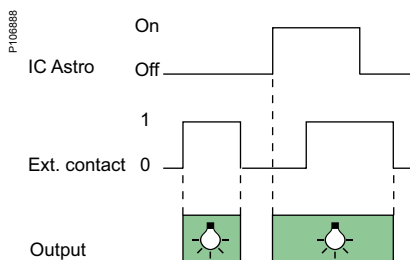


Fig. 6.

Example

Automatically lighting On and Off a shop window in Paris according to sunset and sunrise, example the 20th June.

- At night (10 pm) the lighting switch-on.
- At the morning (6 am) the lighting switch-off.

Configuration

This consists of writing in the memory:

- The language.
- The place of installation, either:
 - by its position (Argentina, China, etc.) and by the closest town,
 - by its geographic coordinates (latitude, longitude, time difference with respect to GMT) (a map is provided with the product).
- The year, month, day and time.
- Once this phase is complete, IC Astro will calculate the sunrise and sunset times and propose a default programme (operation from sunset to sunrise) (see Fig. 3).

Programming an Off period

The IC Astro offers the possibility of adding an "Off" period (programmed switch-off and switch-on) inside the programme, between the sunrise and sunset times (by default it is proposed from 11 pm to 5 am) (see Fig. 4).

Modifying programming and configuration

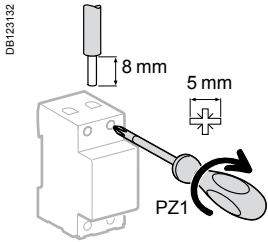
The twilight switch allows:

- Creation of a new customised programme with possibility of copying onto the other days.
- Display of programmes in memory.
- Deletion, modification or addition of an automatic or programmed switching operation.
- Partial or total deletion of the programme (date, time and language are kept).
- Modification of time, date, summer/winter time.
- Temporary cancellation of the "On" periods by configuring start and end dates and Times of absence (holidays).
- Adjustment of difference in sunset and/or sunrise times by ± 120 min. according to local constraints (mountains, buildings, etc.) (see Fig. 5).

Move to On/Off override

- Briefly press (<2 s) at the same time on the 2 keys "-", "+": (value setting and navigation keys) on the front face to move to "ON TEMP" or "OFF TEMP".
- Hold down (>2 s) the keys to move to "ON PERM" or "OFF PERM".
- The supply of input 5 forces the IC Astro output to the "ON" position. This override takes priority over the product On/Off override function (see Fig. 6).

Connection



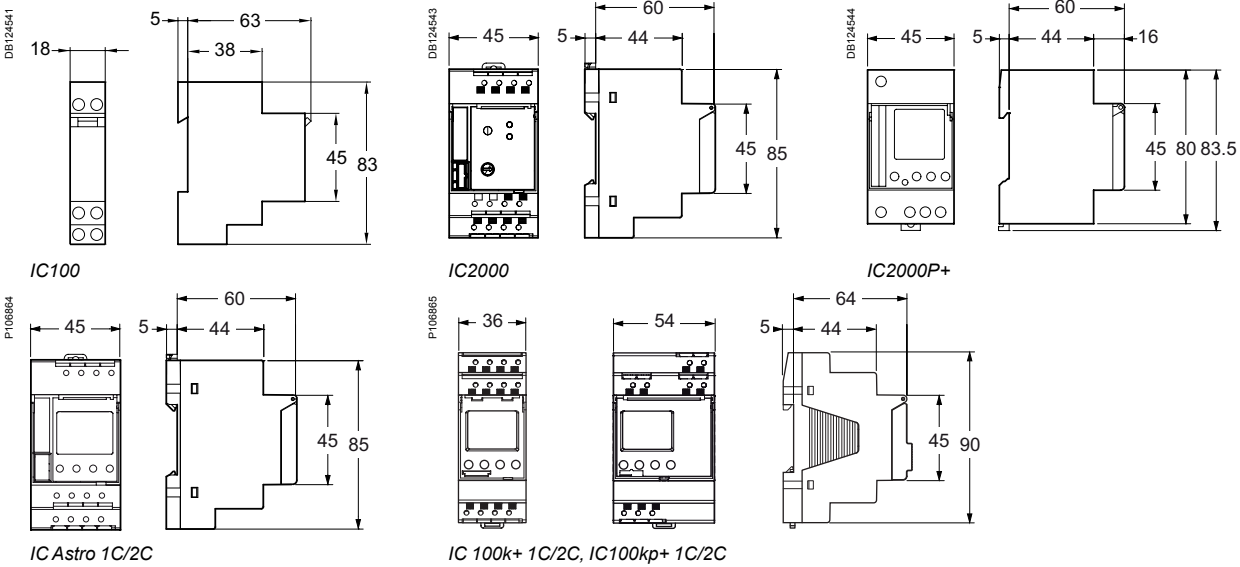
Type	Tightening torque	Copper cables	
		Rigid	Flexible or with ferrule
IC100, IC2000P+	1.2 N.m	≤ 6 mm ²	≤ 6 mm ²
IC2000, IC Astro, IC 100k	2 screwless / pole	2 x 2.5 mm ²	2 x 2.5 mm ²

IC100, IC Astro are mechanical compatible with electrical distribution comb busbar.

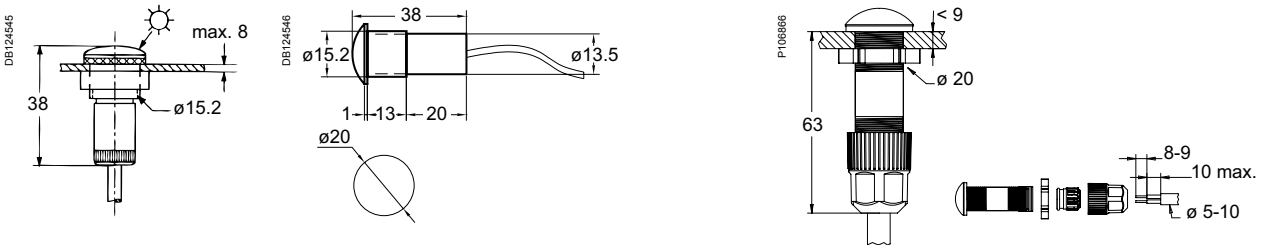
Weight (g)

Twilight switches	
IC100	173
IC2000	280
IC2000P+	323
IC Astro	132
IC 100k+/kp+ 1C / IC 100k+/kp+ 2C	183/ 352

Dimensions (mm)

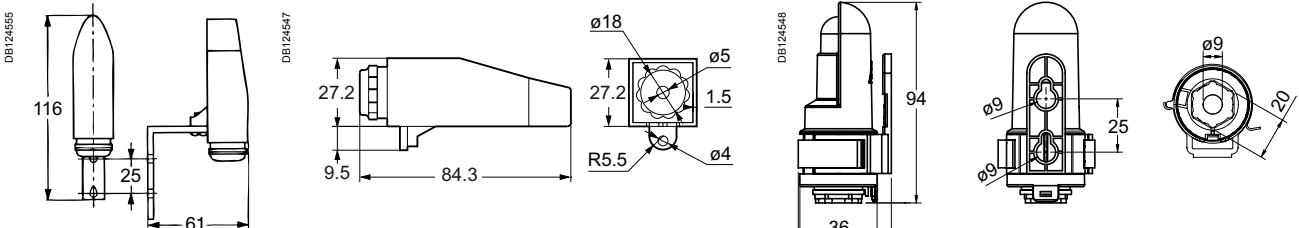


Cells



Standard switchboard cell (15281) Fixed externally in vertical position by 2 ø 4 mm screws

Digital switchboard cell (CCT15261)



Wall-mounted cell (delivered with IC100, IC2000P+)

Standard and digital wall-mounted cell (CCT15268, CCT15260)