

## Simply clever! The digital DIN-rail time switches by Grässlin TALENTO PRO

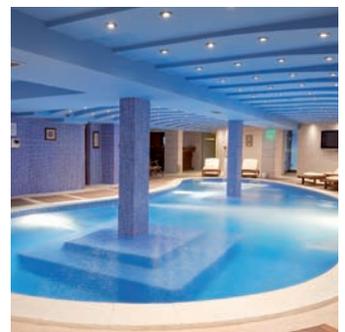


# Trends and developments on the market.

## MAXIMUM ENERGY EFFICIENCY AT LOW EFFORTS

In a saturated fast-moving market, the trend towards a sustainable ecological awareness becomes more and more apparent. On the condition that we keep our comfortable and high standard of living, the thought of an efficient use of our resources has now become established in many minds. As manufacturer of control units for time, temperature and light, we need to address the current requirements in order to supply the market with solution-oriented products. Our goal is to control complex applications using simple and user-friendly products in order to maximize energy efficiency.

More than 50 years of experience in the area of time switches, light and temperature control make Grässlin a reliable partner. When developing the new digital DIN-rail time switch series, we focused on satisfying the current needs of our customers with useful functions and flexible programming options. The perfect solution for intelligent building management.



# The new digital DIN-rail time switches talento pro introduce themselves.

## THIS IS US ...

We belong to the product family of digital DIN-rail time switches and our developers divided us into two categories, standard and medium. We are happy to welcome the new astronomic time switches talento 751/752 pro in our Standard product range in addition to the traditional weekly time switches talento 371/372 pro. Furthermore, the annual time switches talento 881/882 have joined our Medium series additionally to the weekly time switches talento 471/472 and the astro time switches 791/792. We are represented in the Standard series as well as in the Medium series with a single and a dual-channel time switch.

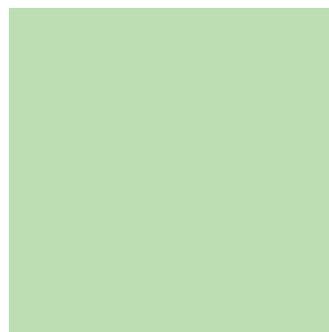
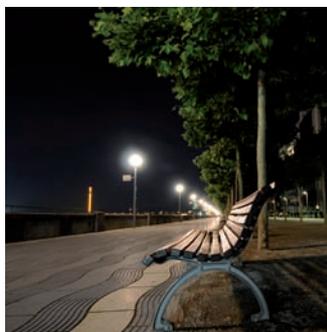
It is very important to us to be operated easily and without problems. For this purpose, special attention was paid to a clear, menu guided programming. The user is led step-by-step through the menu. To make programming even more convenient, we have a blue background illumination and a large, well-structured display. We are supported by flexible, soft operating buttons. The display and the operating buttons are protected by a transparent cover. Additionally, our programs can be protected from unpleasant manipulations by means of a pin code. The users may configure the desired

switching period to meet their needs by combining any number of days of the week in blocks. Of course, automatic summertime/wintertime changeover was configured in our software to avoid annoying re-programming. You may select from 14 languages and a 12 or 24-hour display.

In the process of our development, particular attention was paid to the easily replaceable batteries. Our complete product range is equipped with an exchangeable battery compartment at the front of the time switches. From now on, the batteries can be replaced and disposed of in an environmentally friendly way without having to dismount the time switches, simply by pulling out the battery compartment. In addition, we have been equipped with a zero crossing which allows a relay-protecting switching and a high lamp load. Our whole family can be operated with several voltages and has a non-volatile memory (EEPROM), which prevents deletion of the programs when there is a power failure or the battery is being replaced.

All in all – we are...

## ... JUST CLEVER!

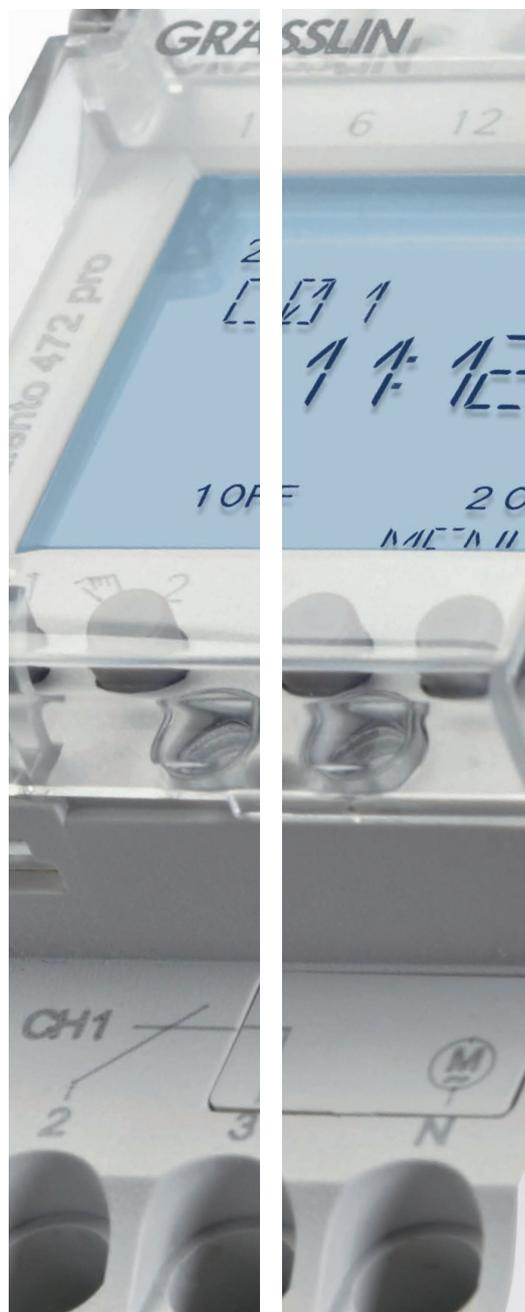


# Our Highlights

## What we offer

- Improved readability through large, well-structured display
- Convenient programming through blue backlight illumination
- Comfortable change of batteries without dismount of time switch
- High flexibility through additional astro program
- Useful service-message-function of operating hours counter

# NEW



# Applications & Features

## What's inside

- Weekly, annual and Astro program
- Holiday program
- 70, 100 and 400 memory locations
- Free weekday block formation
- New Astro function: Possibility either entering longitude and latitude or selection from a list of stored countries or cities
- Nighttime switch-off (Astro program)
- Automatic summertime/wintertime changeover
- Fix ON/OFF
- Override function
- Countdown function
- Puls and cycle function
- External input for override, countdown or pulse counter
- Random mode
- IR interface for program transfer
- PIN code protection
- PC-supported program creation
- Program transfer via hand-held programming device
- Low energy consumption in stand-by-mode



## What we control

- Street lighting
- Advertising signs
- Shop window lighting
- Looking systems in buildings
- Pumps control for pool and spa
- Seasonal programming of temperature- and ventilation control
- Devices, motors and pumps control
- Sun blinds and shutters control
- Control of school and church bells
- And many more...

## The Standard series

### talento 371/372 pro; talento 751/752 pro

#### Dutiful



#### Weekly time switches talento 371/372 pro

The weekly time switches talento 371/372 pro have a memory capacity of 70 spaces and are fitted with a holiday program. The talento 371 pro equipped with one channel as well as the dual-channel time switch talento 372 pro can be switched to fix ON/OFF or the Override function can be activated. Besides these standard functions, the devices have been additionally provided with an operating hours counter with a service message function.

The users may configure the desired switching period to meet their needs by combining any number of days of the week in blocks. Additionally, an automatic summertime/wintertime changeover was configured. You may select from 14 languages and a 12 or 24-hour display.

#### Ingenuous



#### Astronomic time switches talento 751/752 pro

With the talento 751/752 pro, an astronomic time switch was incorporated in the Standard product family. The Astro program has been developed especially for an efficient control of shop window, object, street, parking lot and advertisement lighting. The astronomic time switches are available as one-channel switch talento 751 pro or as dual-channel switch talento 752 pro. The users may define their location either by entering longitude and latitude or by selecting a place from a list of stored countries and cities so that the switching commands are ideally adapted to the local light conditions. At the same time, the switches have a night switch-off function, which makes the control of the light sources even more energy-saving and environmentally-friendly.



## The Medium series

### talento 471/472 pro; talento 791/792 pro; talento 881/882 pro

#### Communicative



#### Weekly time switches talento 471/472 pro

The Medium series was extended to a memory capacity of 100 spaces. Besides the functions of the Standard program such as integrated operating hours counter with service function, holiday program and manual switch for Fix ON/OFF or Override function, the Medium version sets itself apart by a software supported programming on the PC. The weekly program can be entered conveniently at your desk and transferred to the devices by means of the manual programming device talento taxi via an infrared interface. Programming becomes even easier due to the public holidays saved in the programming. The free block formation of weekdays continues even in the one-channel time switch talento 471 pro and the dual-channel version talento 472 pro.

Additionally, the time switches have an external input. It can be assigned a button to activate the Override, Countdown, Cycle or Pulse counter functions. As an additional option, the weekly time switches provide a Random function. This function moves the time of the switching command about 30 minutes maximum and simulates thus presence at home by irregular switching on and off of the application to be controlled.

#### Flexible



#### Astro time switches talento 791/792 pro

The single-channel time switch talento 791 pro as well as the dual-channel time switch talento 792 pro have an additional weekly time switch besides the Astro program. The astro function together with the weekly program features date-based programming, which distinguishes it from the standard version. Depending on the requirements, the users may select between astro and weekly program and easily control season-based requirements also by dates. Furthermore, these devices have an additional night switch-off function to adapt the switches even more precisely to individual requirements. The program is created conveniently on the PC by entering the longitude or latitude or by means of the list of coordinates or the list of cities / countries and transferred to the device by means of the manual programming device talento taxi. Its advantage is the individual and flexible use which is offered by an optimum energy-efficient control.

#### Multitalented



#### Annual time switches talento 881/882 pro

The annual time switches talento 881/882 pro have a weekly, astro and annual program and can be used in multiple ways. They have a memory capacity of 400 spaces, in contrast to the weekly and astronomic time switches (with 100 memory spaces each). The annual time switches have all functions from the talento 471/472 pro and the talento 791/792 pro. These devices have to be programmed just once to control complex applications easily throughout the whole year. The location is entered in the astro programs for talento 881/882 pro by entering coordinates or selecting the place from a list of stored countries and cities. With the astro program, it is possible to control all applications also by dates. Like all products from the Medium family, the annual time switch programs can be created conveniently on a PC and transferred to the time switches by means of the hand-held transmission device. The option to enter the program manually via the operating buttons of the time switch is also available.

## Description of the different functions

### Astro function

The Astro program makes it possible to control daylight-based applications precisely and energy-efficiently. The switchings are adapted exactly to the seasonal light conditions. The users can determine the local sunrise and sunset times by entering the longitude or latitude or by selecting a city or country from a stored list of countries / cities. It is possible to control shop window, object, advertisement, street and car park lighting with high precision and optimum efficiency by means of the precise adjustment of the switching commands to the local conditions and the nighttime switch-off option.

### Annual function

The annual time switch has been designed for complex and demanding applications. The advantage of the annual function is that the date-dependent switching commands only need to be programmed once. The public holidays and a clearly arranged calendar stored in the software make programming easier. A wide range of applications are controlled with a single program over a period of one or several years according to need. The memory capacity of 400 spaces offers a variety of possibilities to cover even special requirements.

### Operating hours counter with service message function

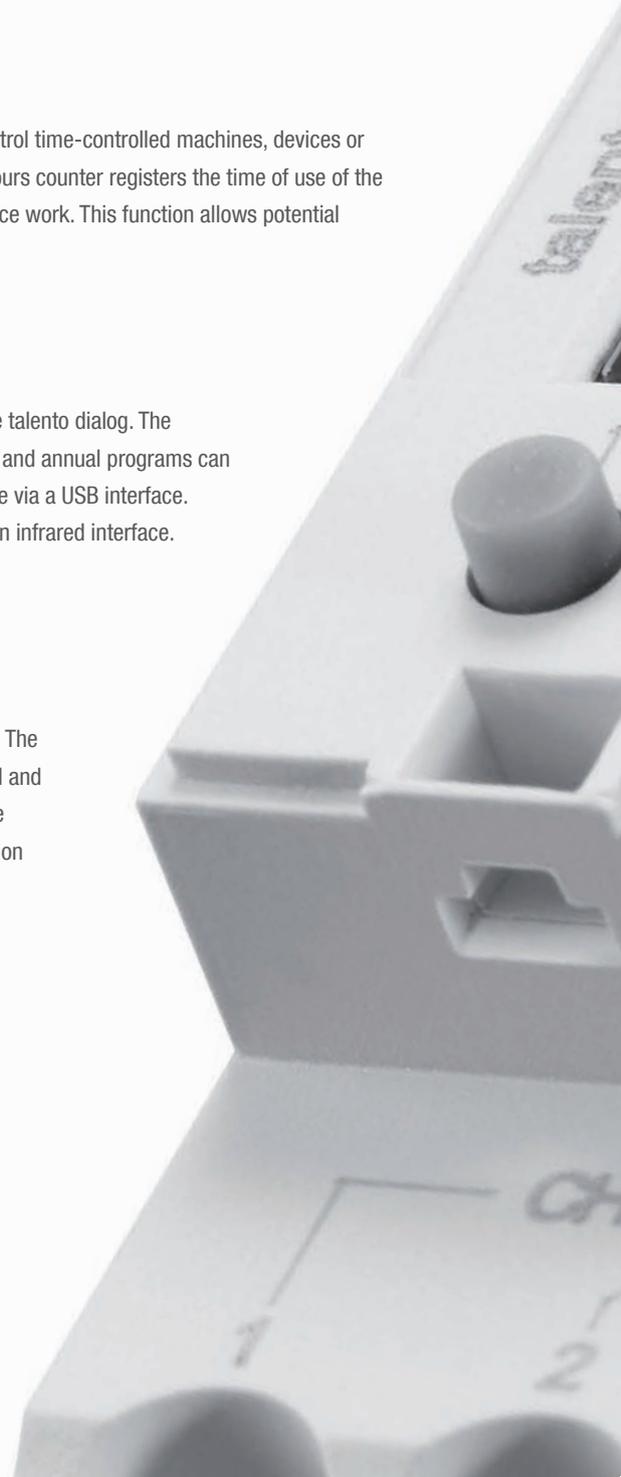
The operating hours counter with service message function offers the advantage to constantly control time-controlled machines, devices or pumps in order to carry out required maintenance work at regular intervals. While the operating hours counter registers the time of use of the application, the service message function is designed to inform the user about pending maintenance work. This function allows potential safety risks to be easily avoided in a time-saving way.

### Software talento dialog

All time switches from the Medium series are easy to program on the PC by means of the software talento dialog. The software is distinguished by a well-structured and user-friendly menu guidance. The weekly, Astro and annual programs can be easily entered from the desk and subsequently transferred to the hand-held transmission device via a USB interface. The data transfer from the hand-held transmission device talento taxi to the devices is done via an infrared interface. The programs can be easily transferred to several devices.

### Holiday function

Specifically for the holiday period, a special holiday function has been integrated into the software. The function makes it possible to interrupt programmed switching commands for a defined time period and to adapt them to short-time modifications. The user defines the time period himself by entering the desired date and modifies the switching program according to his requirements. The holiday function enables an even more precise and efficient control of applications.



СВЯЗНИ

1 6 12 18 24

882 pro



## Application example – In the commercial sector

### ❶ Control for ventilation systems

Weekly time switch  
talento 371/372 pro

The time of use of the ventilation system is registered automatically by the integrated **operating hours counter** which, after a defined number of hours, shows the desired maintenance message **by means of the service message function**.

### ❷ Car park lighting

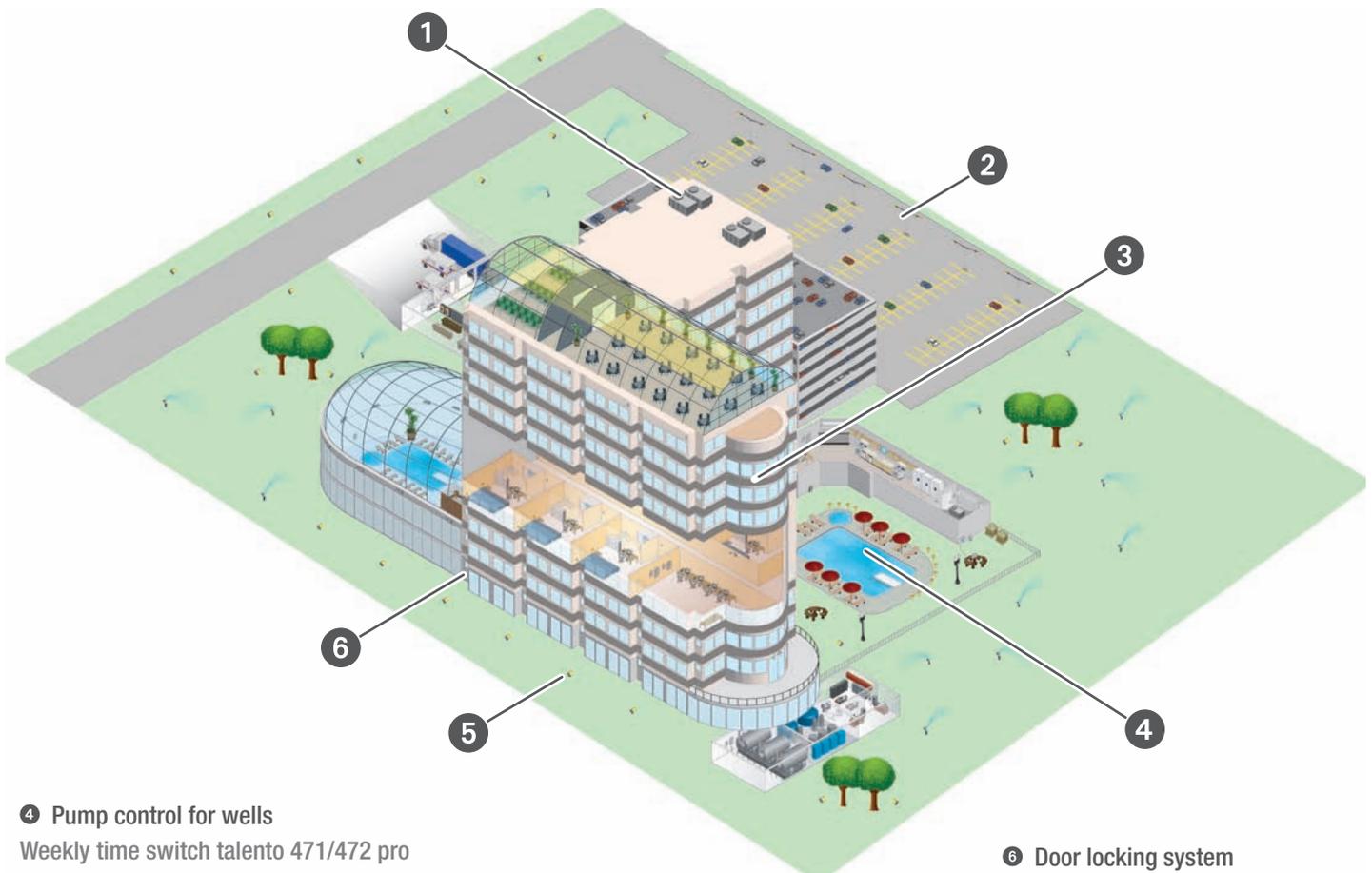
Astro time switch talento 791/792 pro

With these time switches, the user can choose between a **date-related Astro program** and a **weekly program**. The illumination time is reduced to the actually necessary period by means of the daylight-dependent switching of the astro function, while the weekly program can meet **individual requirements** when needed.

### ❸ Recess bell

Annual time switch  
talento 881/882 pro

The annual program stored for complex bell systems can be interrupted for a defined period and adapted to the briefly changed situation, depending on use, by means of the **holiday program** or the **public holiday function** stored in the annual program.



### ❹ Pump control for wells

Weekly time switch talento 471/472 pro

Besides the conventional ON/OFF program, the weekly time switches offer an additional **cycle function**. This function is particularly important for the use of pump controls. The cycle program is started by a single switching command in order to activate the water pump at regular intervals.

### ❺ Object illumination

Astro time switch talento  
751/752 pro

Besides the daylight-dependent switching of the Astro program, the **Fix ON/OFF** function of this time switch proves to be a useful method to react flexibly to short-term requirements. This function is used to interrupt the timer program after the activation of the **Fix ON/OFF function** and to adapt the illumination status spontaneously to the current situation.

### ❻ Door locking system

Weekly time switch talento 371/372 pro

The free block formation of weekdays function makes it possible to adapt the program exactly to the desired switching times of the door locking system. The possibility to secure the buttons with a **PIN code** eliminates the risk of a program manipulation.

## Application example – Private area

### ❶ Entry, garden and pool lighting

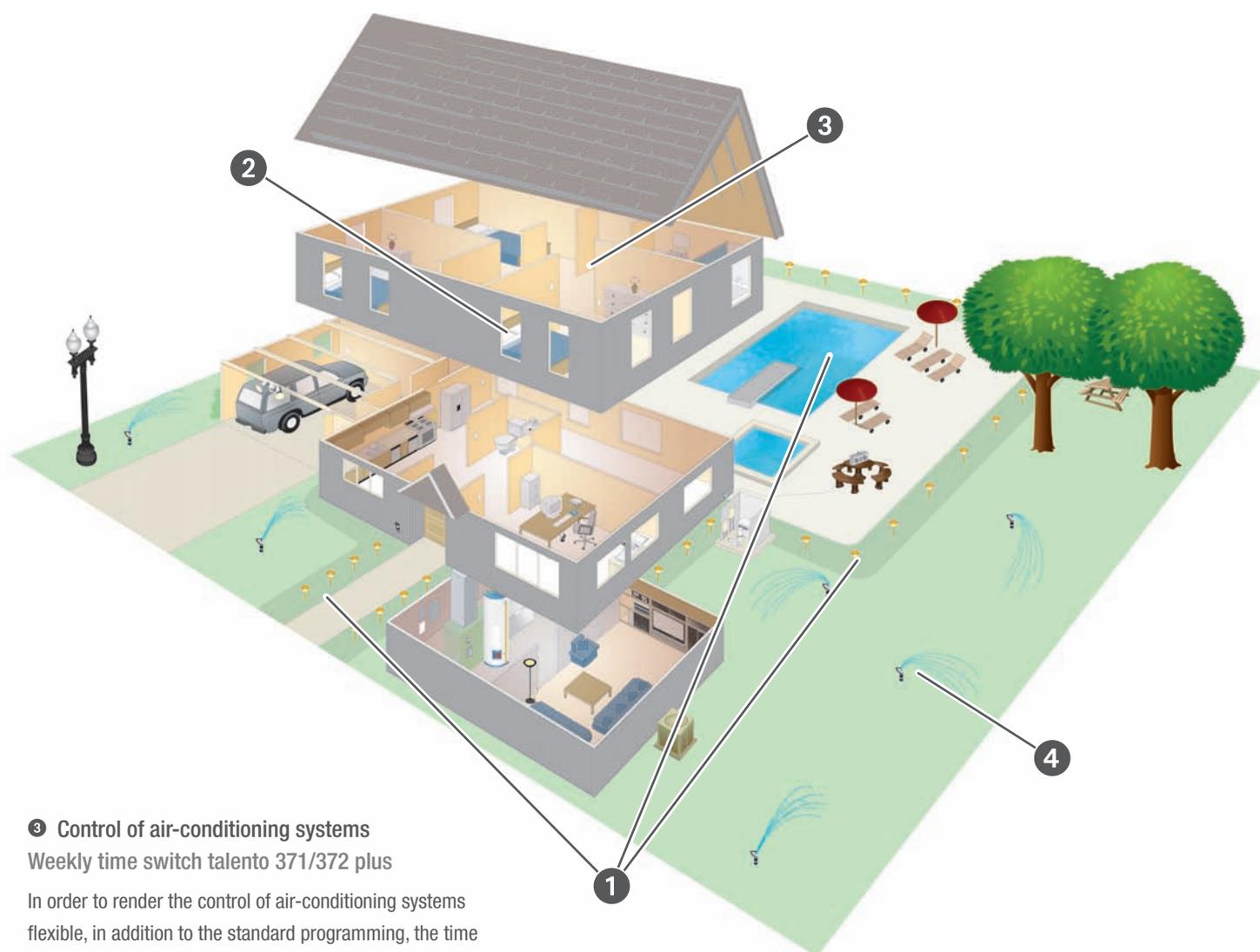
Astro time switch talento 751/752 pro

The lights are controlled according to the daylight by entering longitude and latitude or by selecting from a list of cities or countries in the Astro program and adapt their illumination time to the local conditions.

### ❷ Shutter / blind control

Weekly time switch talento 471/472 pro

With the weekly time switches, the user has the possibility to activate shutters or blinds outside the existing switching program by using the Random function in order to simulate presence at home during absence. By activating the Random function, the switching command is carried out at irregular intervals offset by 30 minutes maximum.



### ❸ Control of air-conditioning systems

Weekly time switch talento 371/372 plus

In order to render the control of air-conditioning systems flexible, in addition to the standard programming, the time switches have been equipped with an **Override function**. This function triggers a premature switching command in order to return to the usual program at the next switching command. By means of this function, the user can react to situations changed at short notice and return quickly and unproblematically to his individual comfortable temperature.

### ❹ Pump control for irrigation systems

Annual time switch talento 881/882 pro

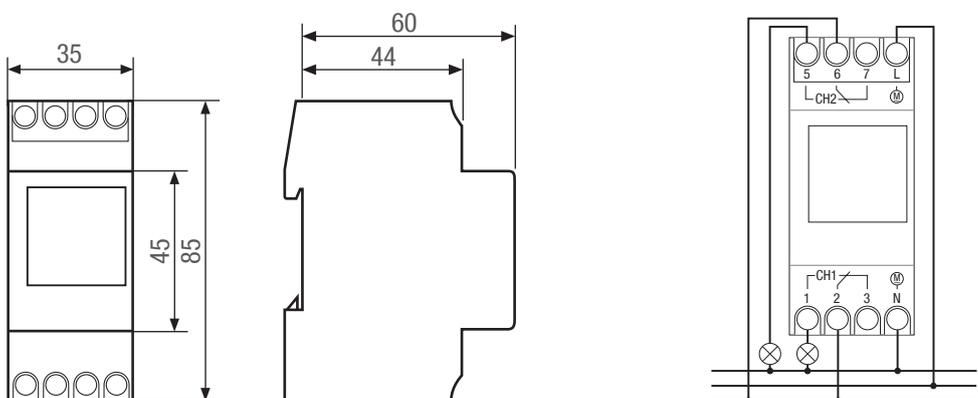
The annual time switches are equipped with a **weekly, Astro and annual program** that enable the user to control the irrigation period as needed related to the date by using the Astro program or the weekly or annual program. The Astro program has a **night switch-off function** in order to activate an additional switching command if necessary.

## Overview features

	talento 371/372 pro	talento 751/752 pro
Memory spaces	70	70
Keyboards	4 touch buttons	4 touch buttons
Summer/winter time changeover	automatic / free selectable / OFF	automatic / free selectable / OFF
Data transmission (taxi)	-	-
Backlight	●	●
PIN-Code	●	●
Hour counter with service function	●	●
External input:		
- Override ON / OFF	-	-
- Countdown	-	-
- Pulse counter	-	-
Random generator	-	-
12/24h time setting	●	●
Weekly program		
- ON/OFF	●	-
- Pulse	-	-
- Cycle	-	-
Annual program		
- ON/OFF	-	-
- Pulse	-	-
- Cycle	-	-
Holiday program		
- ON/OFF	●	●
- Pulse	-	-
- Cycle	-	-
- OFF	●	●
Astro program	-	●
Shortest switching time	1 min.	1 min.
Programmable	every minute	every minute
Block formation of weekdays	free assignment	free assignment
Manual switch	automatic / override / fix ON/OFF	automatic / override / fix ON/OFF
Switching state display	●	●
Sealable	●	●

## Dimensional drawings / circuit diagrams

talento 371/372 pro  
talento 751/752 pro

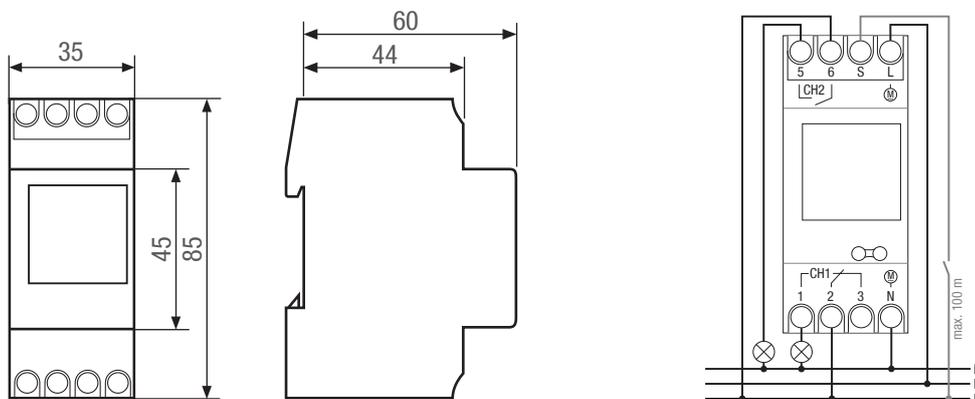


## Overview features

	talento 471/472 pro	talento 791/792 pro	talento 881/882 pro
Memory spaces	100	100	400
Keyboards	4 touch buttons	4 touch buttons	4 touch buttons
Summer/winter time changeover	automatic / free selectable / OFF	automatic / free selectable / OFF	automatic / free selectable / OFF
Data transmission (taxi)	●	●	●
Backlight	●	●	●
PIN-Code	●	●	●
Hour counter with service function	●	●	●
External input:			
– Override ON / OFF	●	●	●
– Countdown	●	●	●
– Pulse counter	●	●	●
Random generator	●	–	●
12/24h time setting	●	●	●
Weekly program			
– ON/OFF	●	●	●
– Pulse	●	●	●
– Cycle	●	●	●
Annual program			
– ON/OFF	–	–	●
– Pulse	–	–	●
– Cycle	–	–	●
Holiday program			
– ON/OFF	●	●	●
– Pulse	●	●	●
– Cycle	●	●	●
– OFF	●	●	●
Astro program	–	●	●
Shortest switching time	1 sec.	1 sec.	1 sec.
Programmable	every minute	every minute	every minute
Block formation of weekdays	free assignment	free assignment	free assignment
Manual switch	automatic / override / fix ON/OFF	automatic / override / fix ON/OFF	automatic / override / fix ON/OFF
Switching state display	●	●	●
Sealable	●	●	●

## Dimensional drawings / circuit diagrams

talento 471/472 pro, talento 881/882 pro  
talento 791/792 pro



## Technical data

	talento 371/372 pro		talento 751/752 pro	
Dimensions H x W x D (mm)	45 x 35 x 60			
Width in TE	2 modules			
Distributor cut-out (mm)	46 x 36			
Installation type	DIN rail			
Weight (g) approx.	approx. 170			
Connection voltage	110 – 230 V AC			
Frequency	50/60 Hz			
Power consumption at 230 V~ (AC)	1 VA			
Switch contacts	1 changeover contact	2 changeover contact	1 changeover contact	2 changeover contact
Switching output	zero cross switching, potential-free and phase-independent			
Opening width	< 3 mm			
Lamp type				
– Resistive	16 A, 250 V, $\cos \phi = 1$			
– Inductive	10 A, 250 V, $\cos \phi = 0,6$			
– Incandescent	2600 W			
– Fluorescent				
Uncorrected	1000 VA			
Serial corrected	1000 VA			
Parallel corrected	730 VA (80 mF)			
Lead-lag (duo)	1000 VA			
– Halogen lamp load	2600 W			
– Compact fluorescent lamp	22x7 W, 18x11 W, 16x15 W, 16x20 W, 14x23 W			
– Uncorrected mercury discharge lamp	4x125 W, 2x250 W, 1x700 W			
– Parallel corr. mercury discharge lamp	6x50 W (20 mF), 4x125 W (10 mF), 2x250 W (18 mF), 1x400 W (25 mF), 1x700 W (40 mF)			
– Uncorrected sodium discharge lamp	2x250 W, 1x400 W			
– Parallel corr. sodium discharge lamp	2x150 W (20 mF), 1x250 W (32 mF), 1x400 W (45 mF)			
– Energy saving lamps 230 V	37x7 W, 30x11 W, 26x15 W, 26x20 W, 11x23 W			
Rated load AC1/AC15	4000 VA / 750 VA			
Min. switching load	300 mW			
DC Switching capacity (24V-/50V-/220V-)	800 mA / 300 mA / 150 mA			
Housing and insulation material	high-temperature resistant, self-extinguishing thermoplastic			
Ambient temperature	-10°C ... +55°C			
Protection class (EN60730-1)	II			
Type of protection (EN60529)	IP 20 (outside enclosure)			
Approval	none			
Accuracy	typ $\pm 0,5$ sec./day at +20° C			
Time basis	quartz			
Power reserve	3 years from factory at +20°C (Replaceable battery CR2032)			
Max. terminal capacity	1 - 4 mm <sup>2</sup>			
Connection type	Captive $\pm$ screw terminal			

## Technical data

	talento 471/472 pro		talento 791/792 pro		talento 881/882 pro	
Dimensions H x W x D (mm)	45 x 35 x 60					
Width in TE	2 modules					
Distributor cut-out (mm)	46 x 36					
Installation type	DIN rail					
Weight (g) approx.	approx. 170					
Connection voltage	24 V AC,DC / 110 – 230 V AC					
Frequency	50/60 Hz					
Power consumption at 230 V~ (AC)	1 VA					
Switch contacts	1 changeover contact	1 changeover contact + 1 normally open	1 changeover contact	1 changeover contact + 1 normally open	1 changeover contact	1 changeover contact + 1 normally open
Switching output	zero cross switching, potential-free and phase-independent					
Opening width	< 3 mm					
Lamp type						
– Resistive	16 A, 250 V, $\cos \phi = 1$					
– Inductive	10 A, 250 V, $\cos \phi = 0,6$					
– Incandescent	2600 W					
– Fluorescent						
Uncorrected	1000 VA					
Serial corrected	1000 VA					
Parallel corrected	730 VA (80 mF)					
Lead-lag (duo)	1000 VA					
– Halogen lamp load	2600 W					
– Compact fluorescent lamp	22x7 W, 18x11 W, 16x15 W, 16x20 W, 14x23 W					
– Uncorrected mercury discharge lamp	4x125 W, 2x250 W, 1x700 W					
– Parallel corr. mercury discharge lamp	6x50 W (20 mF), 4x125 W (10 mF), 2x250 W (18 mF), 1x400 W (25 mF), 1x700 W (40 mF)					
– Uncorrected sodium discharge lamp	2x250 W, 1x400 W					
– Parallel corr. sodium discharge lamp	2x150 W (20 mF), 1x250 W (32 mF), 1x400 W (45 mF)					
– Energy saving lamps 230 V	37x7 W, 30x11 W, 26x15 W, 26x20 W, 11x23 W					
Rated load AC1/AC15	4000 VA / 750 VA					
Min. switching load	300 mW					
DC Switching capacity (24V-/50V-/220V-)	800 mA / 300 mA / 150 mA					
Housing and insulation material	high-temperature resistant, self-extinguishing thermoplastic					
Ambient temperature	-10°C ... +55°C					
Protection class (EN60730-1)	II					
Type of protection (EN60529)	IP 20 (outside enclosure)					
Approval	none					
Accuracy	typ $\pm 0,3$ sec./day at +20° C					
Time basis	quartz					
Power reserve	10 years from factory at +20°C (Replaceable battery CR2450)					
Max. terminal capacity	1 - 4 mm <sup>2</sup>					
Connection type	Captive $\pm$ screw terminal					



E-Marken  
Partner



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