



**KNX COIN-/TOKEN-OPERATED TIMER
CT KNT 02X**



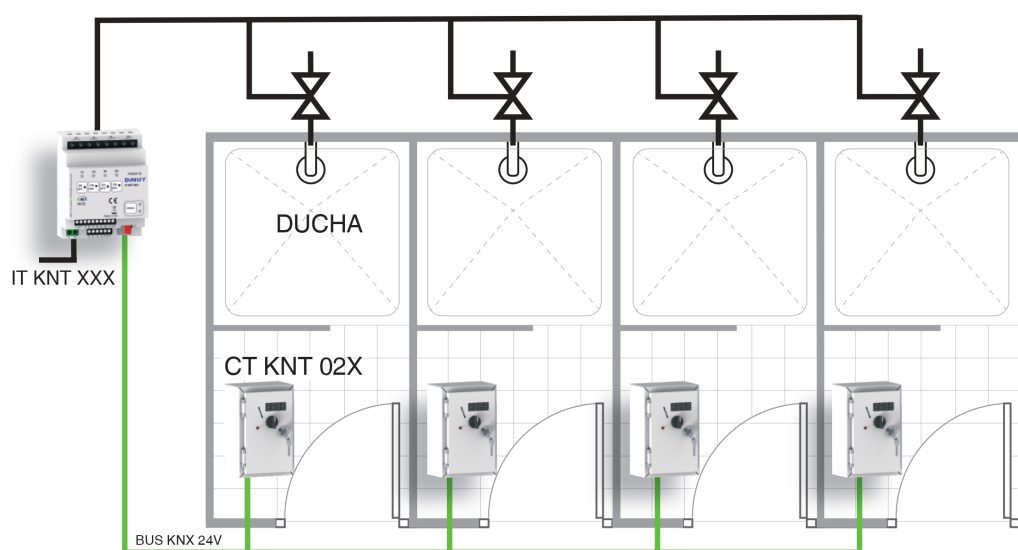
USER MANUAL

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1 INTRODUCTION

- KNX time Counter activated by coins or tokens.
- Its function is to send an action (On/Off, Scene, or Value) after inserting a set number of coins or tokens, and for a predefined time period. This time is cumulative each time the defined number of coins is inserted.
- As additional functions, it includes the following:
 - Pre-warning: allows receiving a warning, via a switching object, before the main timing period ends.
 - Extra timing: allows assigning an additional timing period when a number of coins/tokens greater than the main set value is inserted.
 - Tariff 2: allows assigning a different number of coins/tokens and timing according to a defined schedule and calendar (requires a bus clock).
- Automatic summer/winter time changeover.
- The display can show the following:
 - Stand-by mode: the number of coins/tokens to be inserted.
 - Operating mode: the remaining time.
- Includes a front selector that allows manual pausing of the timing.
- White RAL 9003 metal security enclosure with key lock.
- Configuration and commissioning via ETS®.
- Application examples: campsites, tennis/padel courts, churches, gas stations, hospitals, marinas, laundries, etc.
- Example of control in water supply:



Control de electroválvulas en KNX.

2 CONFIGURATION

2.1 Basic Settings

2.1.1 Basic Objects

Number *	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
30	[TRF1] No. Coins	Set No. of Coins	1 byte	C	-	W	-	-	tariff (0..255)	Low
31	[TRF1] Main Timing	Set Main Timing	2 bytes	C	-	W	-	-	time (s)	Low
41	[GBL] Time of the day	Set Time of the day	3 bytes	C	-	W	T	U	time of day	Low
42	[GBL] Date	Set Date	3 bytes	C	-	W	T	U	date	Low
43	[GBL] Send Switch	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low

- **No. Coins:** number of coins or tokens (depending on the model) that must be inserted to send the corresponding object (ON) and activate the timing.
- **Main Timing:** time that must elapse to send the corresponding object (OFF).
- **Time of the day:** allows updating the Counter's time.
- **Date:** allows updating the Counter's date.
- **Send Switch:** objeto de salida de conmutación de 1 bit del Contador.

2.1.2 Configuration

Once the corresponding database has been imported into ETS and the device has been added to the project topology, configuration is started by accessing the device's parameter tab.

1.1.1 Coin-/Token-operated Timer > BASIC SETTINGS > Configuration

– BASIC SETTINGS

Configuration

Sending

+ ADVANCED SETTINGS

+ EXTRA RATE

BASIC SETTINGS

No. of Coins/Tokens

Main Timing hh:mm:ss

Switching Type Continuous Flashing

Status after a supply failure Reset Save Timing

Enable Pre-warning No Yes

- **No. of Coins/Tokens (1..4):** number of coins or tokens (depending on the model) that must be inserted to trigger the sending of the corresponding object (ON) and activate the timing.
- **Main Timing (1s..5h):** time that must elapse to send the corresponding object (OFF). This time is reset each time the coins/tokens defined in the “No. of Coins/Tokens” parameter are inserted.

- **Switching Type (Continuous / Flashing):** defines whether the 1-bit output object “[GBL] Send Switch” is continuously maintained at the set value for the duration of the timing, or if it alternates between “1” and “0” in a flashing (intermittent) way:

Switching Type	<input type="radio"/> Continuous	<input checked="" type="radio"/> Flashing
Intermittent ON	<input type="text" value="00:10:00"/>	hh:mm:ss
Intermittent OFF	<input type="text" value="00:10:00"/>	hh:mm:ss

- **Status after a supply failure (Reset / Save Timing):** Defines the behaviour of the timing after bus power is restored:
 - Reset: the timing is reset to zero, and the send object is set to the “OFF” state.
 - Save Timing: the timing is paused and resumes when power is restored. The send object remains in the “ON” state.
- **Enable Pre-warning (No / Yes):** allows receiving a pre-warning before the end of the timing period via the 1-bit output object “[GBL] Pre-warning Send”. This pre-warning can be continuous or alternate between “1” and “0” in a flashing (intermittent) way:

Enable Pre-warning	<input type="radio"/> No	<input checked="" type="radio"/> Yes
Pre-warning Time	<input type="text" value="00:05:00"/>	hh:mm:ss
Pre-warning Flashing	<input checked="" type="radio"/> No	<input type="radio"/> Yes

- Pre-warning Time (1s..1h): sets the warning time to indicate that the timing period is about to end.
- Pre-warning Flashing (No..Yes): allows issuing a pre-warning in flashing mode, using the switching times set in the “Switching Mode” section.

2.1.3 Sending

In this menu, it is possible to set the types of signals sent when the required coins/tokens are inserted (ON) and when the set timing period ends (OFF).

1.1.1 Coin-/Token-operated Timer > BASIC SETTINGS > Sending

<ul style="list-style-type: none"> - BASIC SETTINGS <li style="padding-left: 10px;">Configuration <li style="padding-left: 10px; color: blue;">Sending + ADVANCED SETTINGS + EXTRA RATE 	<div style="border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <p>ON</p> <p>SWITCH ✓</p> <p style="padding-left: 20px;">Send <input type="radio"/> Off <input checked="" type="radio"/> On</p> <p>SCENE ✓</p> <p style="padding-left: 20px;">Send 1</p> <p>VALUE ✓</p> <p style="padding-left: 20px;">Send 0 %</p> </div> <hr style="border: 0.5px solid #ccc;"/> <div style="padding-top: 5px;"> <p>OFF</p> <p>SWITCH ✓</p> <p style="padding-left: 20px;">Send <input checked="" type="radio"/> Off <input type="radio"/> On</p> <p>SCENE ✓</p> <p style="padding-left: 20px;">Send 1</p> <p>VALUE ✓</p> <p style="padding-left: 20px;">Send 0 %</p> </div>
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- **ON:** sending objects upon insertion of the specified coins/tokens.
 - **Switch (Off / On):** when the coins/tokens are inserted, the timing will start, and an “On” or “Off” signal will be sent via the “[GBL] Send Switch” object.
 - **Scene (1..64):** when the coins/tokens are inserted, the timing will start, and a Scene number will be sent via the “[GBL] Send Scene” object.
 - **Value (0%..100%):** when the coins/tokens are inserted, the timing will start, and a percentage value will be sent via the “[GBL] Send Value” object.
- **OFF:** sending objects when the set timing period ends.
 - **Switch (Off / On):** when the timing period ends, an “On” or “Off” signal will be sent via the “[GBL] Send Switch” object.
 - **Scene (1..64):** when the timing period ends, a Scene number will be sent via the “[GBL] Send Scene” object.
 - **Value (0%..100%):** when the timing period ends, a percentage value will be sent via the “[GBL] Send Value” object.

2.2 Advanced Settings

1.1.1 Coin-/Token-operated Timer > ADVANCED SETTINGS

+ BASIC SETTINGS	ADVANCED SETTINGS	
- ADVANCED SETTINGS	Enable Extra Timing	<input type="radio"/> No <input checked="" type="radio"/> Yes
Configuration	No. of Coins/Tokens for Extra Timing	2
+ EXTRA RATE	Extra Timing	02:00:00 hh:mm:ss

- **Enable Extra Timing (No / Yes):** this function allows setting a different timing period based on a specified number of coins/tokens.
- **No. of Coins/Tokens for Extra Timing (2..5):** Number of coins/tokens that must be inserted for the extra timing to apply. The maximum time between coins/tokens to be considered as Extra must not exceed 10 seconds. This parameter cannot be equal to or less than the “No. of Coins/Tokens” in the Basic Settings.
- **Extra Timing (1s..5h):** Extra timing that will be applied when the number of coins/tokens specified in the previous parameter is inserted. This value cannot be equal to or less than the “Main Timing”.

For example:

- 1 Coin / Token = 1 hour
- 3 Coins / Tokens = 5 hours

To do this, it must be set as follows:

BASIC SETTINGS

No. of Coins/Tokens	1
Main Timing	01:00:00 hh:mm:ss

ADVANCED SETTINGS

Enable Extra Timing	<input type="radio"/> No <input checked="" type="radio"/> Yes
No. of Coins/Tokens for Extra Timing	3
Extra Timing	03:00:00 hh:mm:ss

2.3 Extra Rate

1.1.1 Coin-/Token-operated Timer > EXTRA RATE > Configuration

<p>+ BASIC SETTINGS</p> <p>+ ADVANCED SETTINGS</p> <p>- EXTRA RATE</p> <p style="color: blue; font-weight: bold;">Configuration</p>	<p>EXTRA RATE</p> <p>Enable Rate 2 <input type="radio"/> No <input checked="" type="radio"/> Yes</p> <p>No. of Coins/Tokens for Rate 2 <input type="text" value="1"/></p> <p>Rate 2 Timing <input type="text" value="01:30:00"/> hh:mm:ss</p> <p>Enable Extra Timing for Rate 2 <input checked="" type="radio"/> No <input type="radio"/> Yes</p> <hr/> <p>Between dates <input checked="" type="radio"/> No <input type="radio"/> Yes</p> <hr/> <p>WEEKDAYS</p> <p>Monday <input type="checkbox"/></p> <p>Tuesday <input type="checkbox"/></p> <p>Wednesday <input type="checkbox"/></p> <p>Thursday <input type="checkbox"/></p> <p>Friday <input type="checkbox"/></p> <p>Saturday <input type="checkbox"/></p> <p>Sunday <input type="checkbox"/></p> <p>Every day <input type="checkbox"/></p> <hr/> <p>Enable summer/winter time change <input type="radio"/> No <input checked="" type="radio"/> Yes</p>
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- **Enable Rate 2 (No / Yes):** this function allows setting a second pricing tariff based on dates, specific days of the week, or time schedules.
- **No. of Coins/Tokens for Rate 2 (1..4):** number of coins or tokens (depending on the model) that must be inserted to trigger the sending of the corresponding object (ON) and activate the timing within Rate 2.
- **Rate 2 Timing (1s..5h):** time that must elapse to send the corresponding object (OFF). This time is reset each time the coins/tokens defined in the “No. of Coins/Tokens for Rate 2” parameter are inserted.
- **Enable Extra Timing for Rate 2 (No / Yes):** this function allows setting a different timing period based on a specified number of coins/tokens within Rate 2.

Enable Extra Timing for Rate 2 No Yes



No. of Coins/Tokens for Rate 2 Extra Timing

Extra Timing for Rate 2 hh:mm:ss

- **No. of Coins/Tokens for Rate 2 Extra Timing (2..5):** number of coins/tokens that must be inserted for the extra timing to apply. The maximum time between coins/tokens to be considered as Extra must

not exceed 10 seconds. This parameter cannot be equal to or less than the “No. of Coins/Tokens” in the Basic Settings.

- **Extra Timing for Rate 2 (1s..5h):** extra timing that will be applied when the number of coins/tokens specified in the previous parameter is inserted. This value cannot be equal to or less than the “Main Timing”.
- **Between dates (Yes / No):** allows setting the start and end dates for Rate 2.

Between dates	<input type="radio"/> No <input checked="" type="radio"/> Yes
Start Date Rate 2	01/01/2025 
End Date Rate 2	31/12/2025 

- **Weekdays:** allows setting the days of the week on which Rate 2 will apply. If any day is selected, it is necessary to set the start and end times for Rate 2.

WEEKDAYS	
Monday	<input checked="" type="checkbox"/>
Tuesday	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>
Thursday	<input type="checkbox"/>
Friday	<input type="checkbox"/>
Saturday	<input type="checkbox"/>
Sunday	<input type="checkbox"/>
Every day	<input type="checkbox"/>
<hr/>	
Schedule Monday	<input type="radio"/> No <input checked="" type="radio"/> Yes
Start Time Rate 2	18:00 <small>hh:mm</small>
End Time Rate 2	22:00 <small>hh:mm</small>

- **Enable summer/Winter time change (No / Yes):** enables automatic switching between summer and winter time.

3 ETS DATABASE

The ETS database can be downloaded from the DM KNT XXX product website (www.dinuy.com) or from the ETS online catalogue.

Appendix I: Communication Objects

No.	Name	Size	I/O	Range	Object Function	Flags	DPT	Description
30	[TRF1] No. Coins	1 byte	E	1 .. 4	Set No. of Coins	C – W – –	[5.006] DPT_Tariff	Sets the number of coins/tokens that must be inserted
31	[TRF1] Main Timing	2 bytes	E	1 .. 18.000	Set Main Timing	C – W – –	[7.005] DPT_TimePeriodMin	Sets the time during which the Counter's output objects will remain "ON" from the last insertion of the required coins/tokens
32	[GBL] Flashing ON Timing	2 bytes	E	1 .. 18.000	Set Flashing ON Timing	C – W – –	[7.005] DPT_TimePeriodMin	Sets the time during which the counter's "[GBL] Send Switch" output object will remain ON during flashing mode
33	[GBL] Flashing OFF Timing	2 bytes	E	1 .. 18.000	Set Flashing OFF Timing	C – W – –	[7.005] DPT_TimePeriodMin	Sets the time during which the counter's "[GBL] Send Switch" output object will remain OFF during flashing mode
34	[GBL] Pre-warning Timing	2 bytes	E	1 .. 18.000	Set Pre-warning Timing	C – W – –	[7.005] DPT_TimePeriodMin	Time before the end of the main timing period when the pre-warning is executed
35	[TRF1] Extra Timing No. of Coinds	1 byte	E	2 .. 5	Set No. of Extra Coins	C – W – –	[5.006] DPT_Tariff	Sets the number of coins/tokens that must be inserted for the Extra Timing
36	[TRF1] Extra Timing	2 bytes	E	1 .. 18.000	Set Extra Timing	C – W – –	[7.005] DPT_TimePeriodMin	Sets the time during which the Counter's output objects will remain "ON" from the last insertion of the required coins/tokens in the Extra Timing
37	[TRF2] No. Coins	1 byte	E	1 .. 4	Set No. of Coins for Rate 2	C – W – –	[5.006] DPT_Tariff	Sets the number of coins/tokens that must be inserted for Rate 2
38	[TRF2] Main Timing	2 bytes	E	1 .. 18.000	Set Main Timing for Rate 2	C – W – –	[7.005] DPT_TimePeriodMin	Sets the time during which the Counter's output objects will remain "ON" from the last insertion of the required coins/tokens in Rate 2
39	[TRF2] Extra Timing No. Coins	1 byte	E	2 .. 5	Set No. of Extra Coins for Rate 2	C – W – –	[5.006] DPT_Tariff	Sets the number of coins/tokens that must be inserted for the Extra Timing within Rate 2

No.	Name	Size	I/O	Range	Object Function	Flags	DPT	Description
40	[TRF2] Extra Timing	2 bytes	E	1 .. 18.000	Set Extra Timing for Rate 2	C - W - -	[7.005] DPT_TimePeriodMin	Sets the time during which the Counter's output objects will remain "ON" from the last insertion of the required coins/tokens in the Extra Timing of Rate 2
41	[GBL] Time of the day	3 bytes	E/S	0:00 .. 23:59	Set Time of the day	C - W T U	[10.001] DPT_TimeOfDay	Allows setting the Counter's time
42	[GBL] Date	3 bytes	E/S	01/01/00 .. 31/12/99	Set Date	C - W T U	[11.001] DPT_Date	Allows setting the Counter's date
43	[GBL] Send Switch	1 bit	S	0 / 1	0 = Off, 1 = On	C - - T -	[1.001] DPT_Switch	Switching output object
44	[GBL] Send Pre-warning Switch	1 bit	S	0 / 1	0 = Off, 1 = On	C - - T -	[1.001] DPT_Switch	Pre-warning switching output object
45	[GBL] Send Scene	1 byte	S	0 .. 63	Send Scene Number	C - - T -	[18.001] DPT_SceneControl	Scene output object
46	[GBL] Send Value	1 byte	S	0% .. 100%	0% - 100%	C - - T -	[5.001] DPT_Scaling	Value output object



WARNING

- The device must be installed and commissioned by a licensed electrician.
- Current safety regulations must be observed.
- The device must not be opened.
- When planning and constructing electrical installations, the relevant guidelines, regulations, and standards of the respective country must be taken into account.



DINUY S.A.

Auzolan 2
20303, Irún
Spain

Tel.: +34 943 627 988

Email: soporte@dinuy.com

Web: www.dinuy.com